AN EXPLORATORY STUDY OF THE RELATIONSHIP BETWEEN LISTENING COMPREHENSION, COGNITIVE COMPLEXITY, RECEIVER APPREHENSION, AND MOOD STATE

by

IRMGARD LOUISE BOCCHINO

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Chairman: Anthony J. Clark, Ph.D.
Major Department: Speech

This study investigated possible relationships between cognitive complexity, receiver apprehension, and listening comprehension in an education environment. Mood state was also examined as a possible covariate in listening comprehension as correlated to cognitive complexity.

Scores of cognitive complexity and receiver apprehension were obtained for 401 students enrolled in twenty beginning through advanced level academic courses at Broward Community College, Fort Lauderdale, Florida. The Sequential Test for Educational Progress-Listening Test (1979) was administered one week later in all twenty classes. The Profile of Mood States Test was administered at the conclusion of the test session in order to determine subjects' mood state at the time of testing.

Procedure correlation analysis revealed a statistically significant positive relationship between levels of cognitive complexity and listening comprehension. Also, using procedure correlation, a statistically significant negative relationship was found for levels of cognitive complexity and receiver apprehension. However, no significant correlation was found to exist between receiver apprehension and listening comprehension. Finally, mood state was not found to be a significant covariate in relationship to cognitive complexity as correlated to listening comprehension.

CHAPTER I
INTRODUCTION

Listening has received new and meaningful emphasis recently as an important component of literacy in the American education system. Long unexplored compared to the recognized competencies of reading, arithmetic, and the late-come of interpersonal communication skills, listening is receiving long over-due and world-wide attention by a cross-section of professionals in business, government and industry, as well as education. Listening as a vital skill has finally been recognized as an important component for survival in today's technologically complex world. An individual's need to listen and to comprehend is critical in everyday life as well as during the rigors of a formal education and business or professional training.

Unfortunately, this current emphasis has revealed a critical gap between the need for training in the area of listening skills and the documentation of the necessary traits that are unique to listening. All too often in the past, listening ability has been taught in an off-hand fashion as a sub-topic of other language skills; most particularly as related to reading comprehension.

Also, there is little doubt that advances in science and computer technology produce vast quantities of information which tend to shift an individual's skill level

from passive information storage needs to active information seeking and processing (Paschall, 1984). According to Work (1978), as social structures become more complex these needs will continue. Individuals will be more dependent in the future on their abilities to process information in the aural as well as the written modes.

In the process of formal education an individual's ability to hear and to comprehend is critical to success. In the past, there has not been a widespread effort to teach listening skills as instrumental to information processing skills. Recent developments in the State of Florida, such as the State Board of Education Rule 6A-1030 and the revised State of Florida "Bill of Rights for Education," have created the need to assess communication competencies in the reading and writing as well as the speaking and listening modes.

Listening is deemed to be an important ability for the processing of information vital to the education and social development of the individual. Banville (1978) and Work (1978) have stated that impairment of listening ability leads to impairment of an individual's ability to function in society.

Since there are numerous variables which might influence the listening ability of an individual, this study will focus specifically on the aspect of listening to comprehend information in a classroom environment. The need for this research is apparent when the lack of

information concerning listening is related to the research designating the importance of listening in the classroom environment. Recent studies involving listening have pointed to possible links between listening to comprehend, receiver apprehension and cognitive complexity as they impact on the classroom environment (Beatty and Payne, 1981; McCroskey and Beatty, 1984). As a result, these factors will serve as the main variables for this study.

The trait of receiver apprehension as a separate aspect of communication apprehension has been the focus of much current research in speech communication; the fear of communication as it relates to an individual's ability to decode and process information has recently become of particular interest (Wheeless, 1975). Beatty and Payne (1983, 1984) posited a theoretical relationship between receiver apprehension and the trait of cognitive complexity in their research. Recently, McCroskey and Beatty (1984) correlated the trait of communication apprehension with state anxiety as contrasted with trait anxiety. Attention to the factor of cognitive complexity as a measurable and distinct element that may affect listening comprehension, as well as the studies of cognitive complexity in relation to receiver apprehension, have led to the rationale for this study. The need exists for a study to investigate the possible correlations between these variables. The purpose of this study is to explore relationships which may exist between dimensions of listening comprehension, cognitive

complexity, and receiver apprehension. Mood State is included as a possible covariate that may impact on listening in the classroom situation. Because this inquiry is concerned with the educational environment in particular, the research was conducted in the form of a field study using the college classroom as the medium in which to explore the degree to which these variables might exist the classroom situation.

Review of Relevant and Related Literature

In order to understand the varied aspects of this study, research data in the area of listening as well as empirical findings in receiver apprehension, cognitive complexity, and mood state will be reviewed. These areas will be examined in view of their relationship to information processing and resultant listening skills behavior. Research relating listening, receiver apprehension, cognitive complexity, and mood state to the educational process will receive particular attention.

Listening

Historically, instructional emphasis on the development of listening ability has been slight as well as infrequent in the curriculum of the American educational system. In direct contrast, reading, writing, and arithmetic have a long tradition of research and exploration as communication skills necessary for educational success. A brief historical review follows which will reveal a

concern with the lack of listening research in education.

Rankin in a 1928 study reported a lack of attention to the important fundamentals of listening skills by determining that surveyed schools placed instructional emphasis on reading 52 percent of the time, writing 30 percent of the time, speaking 10 percent of the time, and listening only 8 percent of the time.

The same investigator had later noted that 70 percent of an adult's daily communication activity is spent communication in an inverse proportion to instructional time allocated: 45 percent listening, 30 percent speaking, 16 percent reading, and 9 percent writing (Rankin, 1930). Rankin concluded that this was an inverse ratio of training to need that should be remedied in the educational system.

This early discovery was also noted in later years by concerned researchers. Investigations conducted in the 1940s noted that the American educational system was still neglecting an extremely important need--teaching students how to be skillful listeners (Goldstein, 1954). For example, in 1948 only Stephens College in Columbia, Missouri, was teaching an independent course in listening (Wolvin and Coakley, 1983).

Further evidence of this neglect was provided by Ralph G. Nichols, who has been named as the "Father of Listening" by contemporary researchers due to his thorough investigations of the characteristics of effective and

and ineffective listeners at the University of Minnesota (Weiss, 1981). Nichols and Stevens (1957) concluded that the American educational system spends the most time training students in skills they need the least, with almost no attention paid to listening ability.

Anderson (1949) concurred with the conclusions many researchers stated after sending his surveys to hundreds of teachers across the country, only to discover that listening was being taught in very few schools. Later, Letton (1957) reported that listening training rarely occurred in American schools. Markgraf (1962) reported that only three of a total of 406 teacher-training institutions offered specialized courses in listening and only 134 of those institutions included listening as an individual unit of a specific course offering. Brown and Keller (1965) noted that while there were thousands of sections of speech courses taught in colleges and universities, only a few taught separate courses in listening.

The Speech Communication Association of America (1967) noted the paucity of training in listening skills, finding it a neglected or incidental part of many elementary and secondary school curricula. This trend still continues causing contemporary researchers to label listening as "The Orphan of Education" (Wolff et al. 1982, p. 3) and "The 3,000 year oversight" (Steil et al. 1983, p. 1).

While traditionally slow to respond, the federal government did pass the Primary and Secondary Education

Act in 1978. This legislation recognized the need for listening skills and speaking skills to be added to the traditional skills of reading, writing and arithmetic (Wolvin, 1982). Another belated but important step in the recognition of the need for listening competency came with the formation of the International Listening Association (ILA) in 1979. The purpose of the ILA is to promote the study and development of effective listening in educational training at every level (Wolff et al. 1982).

Besides these national and international efforts to recognize listening skills as a vital, necessary communication competency, the State of Florida has also become active in attempting to bring students back to important basics. Recently Florida included the twin competencies of speaking and listening in its "Bill of Rights for Education" legislation (Bassett, Whittington and Staton-Spicer, 1978; Work, 1978). At the time of this writing the State of Florida is in the process of creating an assessment program to be administered to all students state-wide at the conclusion of their sophomore year in college. All state-supported institutions are under legal mandate to test speaking and listening skills by August of 1985 (Paschall, 1984).

Implementation of listening training in school systems across the country is still lacking. There still seem to be only a few documented and empirical studies which attempt to identify discernible and distinct listening

traits. Without such data there is little theoretical foundation for training programs in schools, colleges and universities (Lundsteen, 1979; Nichols, 1961). Thus, the emphasis in the 1980's must be a concentration on the measurement of listening skills as a primary part of communication competency (Pearson and Fielding, 1982).

Definition of Listening. While vital to the direction of listening research, much confusion and lack-of-agreement exists concerning the development of a definition of listening. According to Petrie (1976), this difficulty in obtaining a precise definition exists due to lack of understanding of the components in the process. As a result, no universally accepted definition of listening has yet emerged (Devine, 1968).

Some efforts focused on the distinction between "hearing" and listening as separate traits (Clevenger and Matthews, 1971; Harwood, 1966). Research along these lines defined "aural assimilation" as comprising two distinct components: hearing as the first level--and consisting of the perception of sound by ear only; listening--as the second level--consisting of the attachment of meaning to aural symbols (Nichols and Lewis, 1954, p. 1).

Others have defined listening as a complex set of activities (Hollingsworth, 1974; Kelly, 1967). Buttery (1980) offered a definition of listening as an "active cognitive process." Other researchers have defined

listening as "auding," a process which attached meaning to messages (Berger and Werdman, 1978; Disibio, 1982).

Later research has focused on listening as a complex activity requiring lengthy definition (Lundsteen, 1971) and a resultant need to explore components of that complex definition (Rankin, 1966). Various approaches along these lines evolved with some researchers exploring the components of "effective listening" and "ineffective listening" (Lundsteen, 1971; Nichols and Lewis, 1954). Still others investigated "levels of listening" (Fessenden, 1955; Strickland, 1966).

Early research also explored the possibility that different types of listening existed which could be identified and measured. "Appreciative," "discriminative," and "critical listening" were three distinct prototypes of listening offered by Nichols and Lewis (1954). McCaleb (1981) later distinguished three other basic types of listening as "Informative," "Critical," and "Interpersonal." Four distinct types of listening were posited by Disibio (1982) as "Attentive," "Appreciative," "Analytical," and "Marginal." Wolvin and Coakley (1983) further expended the list with his five distinct categories or types: "Appreciative," "Discriminative," "Comprehensive," "Therapeutic," and "Critical," Most recently Arnett and Nakagawa (1983) explored the assumptive roots of what they labeled as "empathic" listening. John Stewart (1983) also investigated empathic listening as a distinct listening type in a

research study that identified interpretive listening as an alternative to empathy.

As can be clearly observed, there is considerable variation among researchers as to the definitions and the labeling of types of listening. This confusion creates added problems due to the fact that identification of a specific listening definition is integral to the selection of an assessment instrument to be used in any research study attempting to measure listening competencies.

The body of extant research, however, focuses on the term "comprehension" as the key area for measurement in listening research. Nichols and Lewis (1954) identified comprehension as a basic factor in instructive speech, which they then felt became a controlling factor in other levels/types of listening. Barbara (1971, p. 168) stated that "the most essential factor contributing to the effectiveness of listening is comprehension, the understanding and grasp of the idea or meaning of what is heard." Lundsteen (1979) further stated that listening to comprehend was distinct from other "types" of listening.

Most recent research in the area of listening measures comprehension as meaning assigned to listening by the integration of previous knowledge and experience that might require interpretation beyond information which is given (Buttery, 1980). Also, a series of studies conducted by Beatty, Behnke, and Froelich (1980) posits the construct of complexity as a factor in the measure of listening anxiety

as it affects listening comprehension. This factor will be discussed at length later in this chapter.

Listening Tests. Due to the lack of agreement on definition of listening as a singular type, dimension or traits, early measurements of listening skills were developed long before clear theoretical and empirical evidence could validate specific listening abilities. Indeed, these "measurements" were rather primitive and often were subjective in nature in terms of individual personality assessments. Such "measurements" were nothing more than self-rating inventories (Nichols, and Lewis 1954). Lundsteen (1979) found that instruments often lacked agreement on the trait of listening to be measured. Other research findings criticized tests for measuring traits such as reading skill, cognitive ability, verbal ability, memory retention and intelligence levels rather than a clearly defined factor of listening (Kelly, 1965).

Recent studies insist that listening can be measured in spite of the confusion and controversy over the identification of the various traits associated with listening (Backlund, Brown, Gury and Jandt, 1982). A comprehensive review of 71 listening skill instruments was conducted by Backlund et al. (1980) in order to gauge their possible effectiveness as measurements of listening competency. Unfortunately, none of the test instruments could be recommended as an overall assessment tool at the conclusion of the study. Another

exhaustive review was conducted by the State of Florida Task Force on the College Level Skills Assessment Program. Again, in spite of on-going and pressing needs for a universal measuring instrument, the State Task Force did not recommend any of the more than 50 tests it investigated (Paschall, (1984).

However, some extremely helpful insights on listening tests have been gained by the previously cited review processes. Important contributions were made by Backlund et al. (1982, pp. 115-116) in terms of specifying five primary criteria for valid listening instruments: (1) It was determined that to provide control in the consistency of presentation style, stimulus and test questions must be pre-recorded in a natural speaking style; (2) Test messages should be read to students in order to minimize reading skills as an intervening factor in the results; (3) Test questions should be structured for a single, limited response; (4) Reduction of the influence of memory as an intervening factor on test results requires short messages and short test items, within a recommended half-minute to three minutes time span; (5) While keeping stimulus material interesting it is desirable to control vocabulary so as to limit the intervention of verbal ability in the test results.

Because of the many difficulties outlined in the preceding sections of this review, the problems of wide-scale measurements are a continuing challenge to research in

listening skills. It may take researchers many years to discover a workable solution to the measurement dilemma.

At this point, no single instrument that currently exists can give a definite certification of the level of comprehensive listening ability. Difficulties caused by the disagreement over what dimension of listening is to be tested and to the practicality of wide-scale measurement are still unresolved in assessments of the listening process (Backlund et al. 1980).

For example, the Speech Communication Association approved the Communication Competency Assessment Instrument (CCAI) developed by Rubin et al.(1982) after extensive review and discussion. The test, while deemed effective as a comprehensive measure of listening and speaking, is impractical for this study as a 30-minute period per student is necessary for the one-on-one testing situation. Also, the CCAI does not isolate the comprehension level of listening but involves several other levels, such as analytical and descriptive listening.

Another widely used measurement is the Brown-Carlsen Listening Test. It, too, measures a number of different types of listening skills rather than comprehensive listening as a sole dimension. Other problems with the assessment instrument exist as critics have challenged that the test involves possible dependence on memory and/or general mental ability rather than listening skill alone (Paschall, 1984).

Finally, the widely utilized STEP Listening Test developed by the Educational Testing Service in 1979 has been validated as a test instrument and is concerned solely with a basic level of listening comprehension (Paschall, 1984). Some researchers have considered this assessment instrument to be too limited in its measurement of listening (Bostrom and Bryant, 1980) but it is suitable for the focus of this particular research.

Correlates to Listening. Repeated investigations have determined the some-what surprising conclusions that reading skill, intelligence level, maturation level, vocabulary level, and hearing acuity do not seem to significantly affect the listening ability of an individual.

Perhaps the largest body of research has been generated by the effort to correlate listening and reading skills. This pursuit offered the hope of considerable documentation because early studies posited a relationship between the two processes; most notably Nichols (1948) and Brown (1949). Later research revealed the lack of proper foundation for this correlation due to serious methodological problems with assessment tools used in the early studies (Devine 1968). In fact Brown (1966) in a follow-up to his own study concluded that the test instrument used was inadequate to permit a correlation between listening and reading.

In later studies, researchers have consistently separated listening and reading due to factors affecting

rate, style and processing of the messages (Nichols and Lewis, 1954) as well as factors of time and situation Backland et al. 1980; Devine, 1978). In fact, the only similarity of listening to reading as determined by Walker (1977) and Tuman (1980) is that both skills are based on conceptualizing functions and a common language frame; hardly the basis for a real correlation of reading and listening. In 1980, Leo Schell discovered in his research that listening skill measurement at the elementary level should not be equated with reading level.

Elimination of the concept of listening as a function of the intelligence level of an individual occurred as early as 1954 (Nichols and Lewis) and it was further repudiated when studies conducted by Brown (1949), Devine (1968), and Wright (1971) demonstrated a lack of correlation between listening skills and intelligence.

Other factors thought to be correlated to listening were eliminated as the result of studies conducted by Nichols (1954), Nichols and Stevens (1957), Landry (1971), and Rossiter (1972). The conclusions of these researchers found no basis for the correlation of listening ability, practice, maturation or educational levels in terms of improvement of listening skills. Finally, hearing acuity was also determined to be significantly different from listening ability by Harwood (1966).

This section has included a review of the research literature concerning listening, definitions of listening,

tests evaluating listening comprehension skills, and an examination of correlates for listening.

The next section will review the construct of cognitive complexity in terms of definitions of cognitive complexity, tests of cognitive complexity, correlates of cognitive complexity, and will explore current speech communiication research relating cognitive complexity to receiver apprehension.

Cognitive Complexity

The construct of cognitive complexity (CC) originated with George A. Kelly's (1955) research on personal constructs involved in the cognitive structure of individuals. According to Kelly, who used "man-as-scientist" as his explanatory model, man accomplishes the ability to predict outcomes of situations by employing a system of constructs which function to form a perceptual framework. Kelly defined constructs as dimensions in terms of which events are construed or interpreted. The order of events in the system determines what sense, if any, is made of them. This construct was further identified by Schroder, Driver and Struefert (1961) as a central component of information processing. The research of Delia (1972, 1974, 1977) and Hale and Delia (1976) further developed the importance of the construct of cognitive complexity in the social-cognitive development and the communication development of individuals. This paradigm of research on the cognitive complexity construct determined that a more complex construct system

provided the basis for erecting more complex, more organized, and more flexible interpersonal impressions (Delia, 1977).

Delia, Clark and Switzer (1974) found that an individual's interpersonal constructs constitute a cognitive template which serves to interpret and analyze other people's actions in communication situations (p. 300). As this template or construct is applied to the impression formation process, aspects of an individual's appearance or behavior are analyzed and ordered to one or more elements in the perceiver's construct system. Then, additional attributes are ascribed to the individual according to the framework of the perceiver's cognition system (Delia, 1974). As a result, inferred qualities are added by the perceiver to the original elements or impressions given by the individual with which he or she has interacted, thus, the resultant interpersonal impression will be a function of the system of constructs a perceiver brings to the situation. Delia (1977) further elaborates this point by stating that the nature of a person's impression of another, or of a social situation, will be a function of the complexity, the content, and the implicit rules of use characterizing his or her interpersonal construct system.

A very clear and helpful definition of cognitive complexity is offered by Beatty and Payne (1981):

> Cognitive complexity represents a continuum of information processing ability. One end of this continuum consists of persons who use numerous dimensions or constructs and a complex set of rules for combining these dimensions into

> overall impressions and judgments. The other end consists of persons who utilize only a few dimensions and a simple set of integration rules. (p. 365)

From their research on cognitive complexity, Beatty and Payne (1981) concluded that highly complex individuals process information with greater ease and flexibility than cognitively simple individuals.

An earlier explanation of the simple-to-complex continuum used by researchers exploring the construct of cognitive complexity sheds additional light. Crockett (1961, pp. 47-90) contended that a cognitive system will be considered relatively complex in structure if it contains a relatively large number of elements and if the elements are integrated hierarchically by relatively extensive bonds of relationships. This is an elaboration of the "identification" concept offered by Fritz Heider (1958) who established cognitive complexity as a process of interpersonal perception which is extensive, rich, and integrated.

Crockett (1965) later stated that an individual's range of social experiences allows for the creation of a greater number of dimensions for making discriminations in judgment about others. He discovered that the quality of those experiences added to the complexity of an individual's cognitive framework. Wicker (1969), and Scarlett, Press and Crockett (1971) also determined that both the number of and the quality of experiences were important elements in the framework of the cognitive

structure of children. Mayo and Crockett (1964), Rosenkrantz and Crockett (1965) and Delia (1972) reached the same conclusions in their research as applied to adult behavior.

Delia (1974) investigated the reciprocity of self-disclosure when he determined that a spiraling relationship existed between an increase in the number and quality of an individual's cognitive framework and his/her ability to self-disclose.

The research literature is extensive in terms of the attributions accorded cognitively complex individuals in the outcomes of various studies. Delia (1972) and Delia, Clark and Switzer (1979) found that cognitively complex individuals formed interpersonal relationships which are more extensive and differentiated than cognitively simple individuals. Their studies also concluded that cognitively complex individuals better integrate evaluative inconsistency and behavioral variability in others. Nidorf and Crockett (1965) and Rosenkrantz and Crockett (1965) determined that cognitively complex individuals are more organized around motivational attributions in their cognitive framework than are cognitively simple individuals. Mayo and Crockett (1964) and Delia (1974) found that cognitively complex individuals have greater evaluative stability as part of their cognitive framework. Hale and Delia (1976) found that cognitively complex individuals have greater cognitive flexibility for

understanding the perspectives of other individuals in social situations. Crockett, Mahood and Press (1974) determined that cognitively complex individuals have greater cognitive flexibility when given an experimental set in which to understand another individual as a person. Press, Crockett and Rosenkrantz (1969) and Delia and Crockett (1973) discovered that cognitively complex individuals are less dependent upon simplifying cognitive schemes in order to understand social situations.

Interesting conclusions have also been reached on the swiftness with which cognitively complex individuals can respond to social situations as compared to cognitively simple individuals. Miller (1968) found that after a twenty minute interaction highly complex subjects formed impressions that were more differentiated than low (simple) complexity subjects. Delia, Clark and Switzer (1979) found that high complexity subjects had formed more highly organized impressions after only ten minutes of interaction than low complexity subjects. They also discovered that cognitively complex individuals had abstract constructs that could encompass a much wider range of behaviors in that short period of time. Their conclusions determined that there was little question that complex and noncomplex subjects differentially and spontaneously structure their interpersonal environments in different ways (p. 308).

Delia, Clark and Switzer (1979) further distinguished the interactional differences between complex and noncomplex

individuals. They determined that complex interactants were more likely than noncomplex interactants to cognitively organize informal social encounters in terms of person-relevant rather than event-relevant or thing-relevant elements. In other words, cognitively complex interactants appeared to be able to spontaneously structure their social worlds around the personalities and characteristics of the individuals they encountered rather than outside events, such as the weather or sports events. Cognitively complex perceivers were observed to use strategies involving greater sensitivity to the perspectives of message recipients than did cognitively noncomplex perceivers. Hale and Delia (1976) had earlier determined that in more complex interpersonal tasks the ability to construct, organize and maintain listener adaptations was dependent on the capacity to assume other individual's perspectives. Cognitively complex individuals were found to be able to achieve a level of perspective-taking that directly mediated their progression from egocentric to listener-adapted speech.

It can be seen, and as will later be explored, in the rationale for this study that there are many attributions that distinguish cognitively complex and noncomplex individuals. The research literature is rich and varied in terms of the many important studies that have been conducted on the construct of cognitive complexity.

Correlates of cognitive complexity. In addition to the attributions made in an attempt to distinguish cognitively complex and cognitively noncomplex individuals, possible correlations to cognitive complexity have also been explored in terms of sex, age, intelligence, and construct comprehensiveness in the research literature.

Since females are often assumed to be more empathic in interactions with other individuals due to early socialization in their roles in our culture, the factor of sex was explored to determine what impact it might have on determination of the cognitive complexity of individuals.

Delia, Switzer and Clark (1974) wished to determine if female subjects would write more differentiated, and hence, more complex impressions of their relationships with others than would male subjects. They found no statistical significance in tests of the differences of the written impressions written by males and females participating in their study. They also found no statistical significance in the kinds of constructs used by the males and females to formulate their impressions. Delia et al. (1979), concluded that there simply were no significant effects involving the factors of sex of subjects and cognitive complexity. Hale and Delia (1976) also found that there was no significant difference in strength of the relationship between levels of cognitive complexity and the ability to represent the perspective of others in social situations between males and females. Finally, O'Keefe and Delia (1979)

found that the main effect for sex of subjects in their study was not statistically significant. There is then, no correlation of sex to cognitive complexity in the research literature.

In terms of the factor of general intelligence level and intellectual achievement as correlated to cognitive complexity, researchers have once again found no support for their initial assumptions that the intelligence of subjects may have an impact on their cognitive complexity.

Press, Crockett and Rosenkrantz (1969) found a non-significant outcome to their attempt to correlate cognitive complexity to the intelligence and intellectual performance of their subjects. Delia and Crockett (1973), as well as Delia and Clark (1979), discovered that the complexity of a subject's construct system reflected developments specific to the interpersonal sphere and, that past early childhood, this sphere appeared to be relatively independent of general intellectual performance. They concluded that interpersonal construct systems appear to become relatively stable as early as age eight and that there are minimal correlations of no statistical significance between cognitive complexity in the interpersonal domain with general intelligence and intellectual achievement.

Another widely held assumption by researchers also was found to have unexpected results when studies were conducted to explore the possible correlation between age

and cognitive complexity. Researchers eventually found this correlation to be nonsignificant in their experiments.

Clark and Delia (1976) found that strategies employed by subjects in their communication interactions become progressively more sophisticated with age. In terms of persuasion, increases in the age of subjects were also accompanied by the use of a greater number and a greater variety of types of arguments. This led to the conclusion that age did enrich a subject's conceptual framework. Kline, Burleson, and Delia (1978) found that the use of higher level strategies and the production of more differentiated messages correlated significantly with children's levels of cognitive complexity. Delia (1977) found that children's ability to construe communication-relevant differences in listeners and their ability to use those construals in constructing listener-adapted communication increased systematically with age.

O'Keefe and Delia (1979) found that the level of persuasive strategies employed by subjects displayed an essentially monotonic trend with age. They found that the change in complexity from one grade level to the next grade level was gradual but persistent in their results. The largest and only dramatic increase occurred between the first and second grade levels or by age eight. Therefore, it seemed that children as they age tend to use persuasive strategies that call upon progressively advanced levels of social perspective-taking. However,

O'Keefe and Delia also found marked individual differences in the level of children's control over strategic communication in the constructs they used in person perception within the same age group. Even among kindergarteners considered as an age group alone, cognitive complexity was significantly related to individual levels of persuasive strategies with an r = .61 (p. 238). Finally, even among the youngest children studied, the connection between individual differences in person perception and communication processes is already evident in the same age group.

This result confirmed an earlier finding by Delia and Clark (1979) who discovered that the performances of children of all ages in their study were characterized by marked individual differences. Cognitively complex children were found to consistently outperform noncomplex children of the same age and the amount of variance attributable to differences in complexity were frequently greater than that associated with age differences. Delia and Clark found that when an age-related development was observed, complex children made the advance earlier that non-complex children. In effect, complex children of one age were performing at about the same level as noncomplex children two years older (p. 343).

Ritter (1979) studied early and late adolescence with young people from fourteen to seventeen years of age. She concluded that adolescent communication ability

can be tied directly to age and the increased capacity to take the perspective of another, but only indirectly to cognitive complexity. Hence, these researchers showed that across childhood, early adolescence, and among young adults, that subjects with more complex construct systems employ strategies calling upon higher levels of social perspective-taking then subjects of the same age with noncomplex construct systems. Hence, age is not necessarily correlated with cognitive complexity.

Finally, O'Keefe and Delia (1979) found that cognitive complexity is positively correlated with construct comprehensiveness. They define construct comprehensiveness as a qualitative dimension of construct-system development. It allows an individual to be abstract and permeable so that he or she can differentiate among a wide variety of persons by using flexible, individuated constructs. Cognitively complex subjects were found to use comprehensive constructs, while cognitively simple subjects were found to use noncomprehensive constructs. Noncomprehensive constructs tended to be concrete, to lack permeability, to be narrow, to be stereotypic, and to be role-bound (p. 233). A review of the literature indicates that no further research studies have been published to date on this interesting correlate to cognitive complexity.

To summarize briefly, researchers have found no correlation between sex and cognitive complexity, no correlation between intelligence level and intellectual

performance to cognitive complexity, and no consistent correlation to age and cognitive complexity. They have found a positive correlation between construct comprehensiveness and cognitive complexity.

Tests for cognitive complexity. Three basic test instruments have been consistently employed to measure levels of cognitive complexity: Crockett's Role Category Inventory (CRCI), the Interpersonal Construct Differentiation Index (ICDI), and the Paragraph Completion Test (PCT).

The CRCI was developed by Walter H. Crockett at the University of Kansas (1961). According to Delia and Clark (1979) the measure is tied to the notion in Wernian developmental theory that the complexity of a system is, in part, a function of the number of elements it contains. An integration of the views of Kelly (1955) and Werner (1957) as a theoretical basis for the measurement of cognitive complexity is utilized by Crockett for the CRCI. A commonly used version of the CRCI is used in many studies: Press, Crockett and Delia (1973); Delia (1974); Hale and Delia (1976); Delia, Clark and Switzer (1979); and O'Keefe and Delia (1979). It involves asking subjects to describe in writing a real person their own age whom they liked, one whom they disliked, and one toward whom them felt neutral or ambivalent. Subjects are instructed to omit physical characteristics and concentrate instead on the person's attributes or qualities. Approximately five minutes are allowed for each impression.

The subject's level of cognitive complexity is defined as the total number of interpersonal constructs produced in the three spontaneous descriptions. While reliability and validity for scoring the CRCI for the total number of constructs is well established, Delia (1974) posits that the CRCI does not reflect the degree of hierarchic integration of the cognitive system.

Delia and Crockett (1973) developed the Interpersonal Construct Differentiation Index (ICDI) to solve the integration difficulties they perceived in Crockett's inventory. The ICDI was designed to be practical and quick to administer and yet it was determined to be as valid and reliable as the CRCI.

The ICDI is designed as a measure of an index of the dimensional complexity of a person's system of interpersonal constructs, ranging from cognitively simple to cognitively complex. The subject is asked within a five minute time frame to list "qualities" that people have which are important to him/her in terms of understanding their character. Subjects are asked to list these qualities in the left-hand column of the test paper. The subject is then asked to list in the right-hand column of the test paper the qualities people have which are opposite to those previously listed in the left-hand column. After five minutes, the test is completed.

Scoring occurs by using the accompanying ICDI manual to determine the number of construct dimensions produced

in the five minute period by the subject. The total score constitutes the degree of the subject's cognitive differentiation (Delia, 1974).

According to Delia, (1974) the ICDI has face and concurrent validity. Also, convergent validity has been provided through consistently high correlations measuring + .55 to + .79 between this instrument and the Crockett's Role Category Questionnaire. The degree differentiation index is highly stable: a nine week test-retest stability investigation yielded a reliability coefficient of .83 (Delia, 1974).

The third measurement instrument frequently used, and the test favored by this researcher for the current proposal, is the PCT developed by Schroder and his associates (1961). The PCT, like the CRCI and the ICDI, also measures the dimensional complexity of a person's interpersonal constructs by focusing on the number of constructs identified by that individual. In addition, unlike CRCI and the ICDI, the PCT also focuses on the complexity implied by the structural properties of a subject's response. Therefore, the PCT is a more sophisticated instrument and will be used for this particular study. The PCT is more fully described in the materials section of this proposal, but at this point it is necessary to mention two superior aspects of the PCT to the other commonly used measures of cognitive complexity. According to the research of Beatty and Payne (1981) the rules for combinations and numbers of constructs

used in the PCT scoring technique allows for a more full conceptualization of cognitive complexity in terms of the differentiation between levels of complexity for individuals. Also, the PCT is not dependent on verbal ability because the scoring technique does not depend upon the length of subject's responses, as do the CRCI and the ICDI. Powers et al. reported that the ICDI and the CRCI were not independent of verbosity (1979).

Cognitive Complexity and Receiver Apprehension

Prior to a related review of the research literature positing the link between the constructs of cognitive complexity and receiver apprehension, a brief review of the research literature concerning receiver apprehension and listening skills will be presented.

Wheeless (1975) did the pioneer research in the field of speech communication in the development of a theory of receiver apprehension (RA) as separate and distinct from the general construct of communication apprehension (CA). He conceptualized RA as the "fear of misinterpreting, inadequately processing, and/or not being able to adjust psychologically to messages sent by others" (1975, p. 264). Further research on this new conceptualization of RA occurred when Wheeless and Scott (1977) demonstrated RA and source apprehension (SA) to be orthogonally distinct. Beatty, Behnke and Henderson (1980) further substantiated this distinction of RA and SA in their research.

Other research on the construct of listening has focused on elements of listening behavior related to RA. Barbara (1971) concluded that listeners have difficulty comprehending messages when bombarded by more messages than can effectively be heard. The result is anxiety due to a disorganized communication system. Taylor (1964) in prior research, had also concluded that an overloading or jamming of the system may result in an individual trying to escape the input overload by engaging in avoidance of listening. This discovery by Taylor reinforced the earlier findings of Nichols and Stevens (1957) who had reported that difficult listening created tension and therefore, listeners tended to avoid difficult listening situations.

Thus, the anxiety or fear evolving from a listening situation might result in avoidance behaviors which would tend to create inefficient listening comprehension. So, it would seem that as individuals with high levels of RA are tense and anxious about receiving messages, their ability to comprehend messages in listening situations would be affected. Barbara (1971) reported that anxiety or fear had a negative impact on efficient listening (p.91). Johnson (1966) concluded that poor listeners needed to be taught to relax before they could be taught good listening skills.

In the related field of psychology, McReynolds (1976) postulated that there is an assimilation construct

which allows people to incorporate new information into existing cognitive structures. McReynolds and Acker (1966) then found a significant correlation between scales that measured general trait anxiety and scales that measured estimates of subjects' discomfort concerning the accumulation of backlogs of unassimilated information.

Based on the assimilation construct of McReynolds (1976) and Wheeless' (1975) assertion that RA deals in part with information processing, current research in the field of speech communication by Beatty and Payne (1981) has explored the construct of RA in relationship to the construct of cognitive complexity (CC). Beatty, Behnke and Henderson (1980) first investigated the relationship between RA and CC in attempt to empirically validate the Receiver Apprehension Test (RAT). They concluded that the RAT was a respectable measure of subjects' tendencies to respond anxiously in listening situations that require complex information processing or psychological adjustment to messages (p. 135).

Beatty (1981) explored the relationship of RA and CC further concluding that

> Since efficient information processing is central to reducing and preventing excessive cognitive backlogs, the observed relationship between backlogs and RA opens speculation regarding the theoretical connection between RA and CC. (p. 281)

Beatty felt that is was possible that cognitively complex individuals have extended information processing abilities and are able to accumulate less unassimilated information

and, so, they will have lower levels of RA. Beatty and Payne (1981) concluded that CC functions as a construct which intervenes between life experiences and the formation of RA.

Finally, recently published and significant research by Beatty (1984) has successfully related higher levels of cognitive complexity with high levels of listening comprehension. Their results indicated that high-cognitively complex subjects comprehend more listening material than do low-cognitively simple subjects. However their studies used very technical topics as stimulus material with difficult vocabulary levels. There still exists the need to test the relationship of levels of cognitive complexity, and receiver apprehension with listening to comprehend in "typical" classroom situations.

Therefore, there is a solid basis in the current literature to conclude that there is a significant negative correlation between an individual's level of cognitive complexity and an individual's level of receiver apprehension. Hence, the need for this current research study in terms of the investigation of a possible covariance between levels of RA, CC, and listening comprehension.

This section has included a review of the research literature concerning the construct of cognitive complexity the definition of cognitive complexity, tests measuring cognitive complexity, an examination of the correlates for cognitive complexity, and the important research link

between cognitive complexity and receiver apprehension. The section that follows will examine the interest in subject mood states as a covariate.

Mood State.

Mood state has been selected as a covariate for this study because of its possible impact on listening comprehension. An early study conducted by Nichols and Lewis (1954) reported that an individual's mental set will override other factors in his or her behavior. In fact, a listening inventory later developed by Nichols entitled "How well do you Listen?" lists ten bad listening habits for students to use on a self-scoring inventory. Seven of the ten problem areas focus on the ability to concentrate and the mood state of the individual; for example; "letting emotionally loaded words arouse personal antagonism," "faking attention to the speaker," "tolerating or creating distractions." Kelly (1965) and Lundsteen (1979) have focused on the difficulty individuals have in a listening situation and have concluded that the problem may lie in part with the mood or the emotional state of the individual at the time of measurement.

Current textbooks on listening (Steil et al. 1983; Wolff et al. 1982) all specifically mentioned the impact of a mood or emotional state on an individual's ability to listen effectively. Speech Communication textbooks which feature a section on listening skills also caution that individuals must be aware of their emotional state and its possible

interference with listening ability. A typical example is offered by Taylor et al. in the textbook Communicating (1983, p. 142) in which they offer students advice on "controlling mental and emotional states which can interfere with listening to understand the meaning of a message."

A research study by McNair and Lorr (1964) investigated the impact of mood state in education, industrial and psychological situations, finding it to be a significant factor. Lorr, Daston and Smith (1967) determined that mood state was a significant factor in educational and industrial settings. Furthermore, Paschall (1984) and Butler (1984) incorporated mood state in their studies of factors influencing listening comprehension and receiver apprehension. While their statistical treatment did not find that mood state was significant as a covariate, the question of the impact of mood state was not fully answered.

Thus, it was of interest to this researcher to begin to explore mood state as a covariate for this study. Mood state might be an important intervening variable in any test of listening comprehension. The measurement of mood state of the subject participating in this study will therefore be included in this research design. The Profile of Mood States (POMS) developed by McNair and Lorr (1964) will be the test instrument employed in this study. A full justification of the validity, reliability and usefulness of this instrument is presented in a later section of this dissertation.

Rationale and Hypotheses

Four areas of rational resulting from the preceeding review of literature will serve as justification for this study: (1) the need for further research in the area of listening comprehension; (2) the need to explore the construct of cognitive complexity and its potential relationship to listening comprehension; (3) the need to explore the construct of receiver apprehension as a covariate that might potentially intervene with any measure of listening comprehension; (4) the need to explore the potential impact of mood state on the measurement of listening comprehension.

There can be little doubt at this point that listening skill is an important variable in an individual's ability to receive and process information (Lundsteen, 1979). Therefore, listening is an important ability for individual survival in the educational process as well as in securing employment in today's rapidly changing and complex society (Work, 1978). Listening has traditionally received little attention in educational system (Markgraf, 1962; Nichols, 1957; Rankin, 1928; Weiss, 1981; Wolvin and Coakley, 1983) in spite of the fact that listening was long ago identified as a trait separate from other verbal abilities (Biggs, 1956). In spite of the need, research concerning listening as a communication skill has been scant, with most of the effort by researchers in the field of speech communication concentrated on the

development of reliable measurement instruments (Backlund et al. 1980). Much work remains, then, to be done, especially in the need faced by educators and agencies that will be responsible by 1985 for assessing the listening competencies of college students in the State of Florida (Paschall, 1984).

Bakan (1966) stated that there was not enough known about the listening process because of its very complexity caused by the inter-relationships of many factors involved in a communication event. He believed that research in listening must investigate differences in abilities among individuals due to many variables. Harwood (1966) concurred with this viewpoint and later Rubin et al.(1982) also stressed that variables affecting the information processing ability of an individual might also affect an individual's ability to listen and to comprehend. Any assessments of listening competency must then be concerned with such variables and their potential impact on measurement outcomes.

One variable that researchers have explored to a large extent, and that has been shown to have an impact on the ability to process information, is receiver apprehension (RA). It has been demonstrated that RA relates to the receiver or decoder role in communication (Wheeless, 1975). Also, RA has been shown to be a separate and distinct trait in the construct of communication apprehension (Beatty, Behnke and Henderson, 1980). Although one study is currently under

progress on the relationship between RA and listening Paschall, 1984), no studies of the relationship between RA and listening comprehension have been published to date. A need to explore this relationship definitely exists and might serve as justification for this study.

Previous listening research has also investigated the jamming or overload of communication systems which resulted in poor listening behavior (Fessenden, 1955; Taylor, 1964). Listening literature has also reported the anxiety or tension individuals have concerning communication and the consequent avoidance of, or withdrawal from communication situations characteristic of individuals labeled as apprehensives (Barbara, 1971; Nichols and Lewis, 1954; Tutolo, 1977). Recently, a body of literature in speech communication research on information processing as related to receiver apprehension and the construct of cognitive complexity has added greatly to the body of knowledge on RA (Beatty, 1981, 1984).

This recent research on cognitive complexity and the impact of RA on the ability of individuals to receive and process information has suggested that RA is an outcome of unassimilated information due to processing difficulties of individuals (Beatty, 1981). Behnke and Beatty (1981) also demonstrated that the information processing ability of an individual, labeled on a continuum from cognitively simple to cognitively complex, was related to the construct of RA. Beatty, Behnke and

Henderson (1980) had previously stressed that studies should be conducted to examine the relationship of RA to other constructs associated with the emotional variables affecting the reception of messages. They further stated that there was a need to explore the effect of RA on important communication variables such as motivation, listening, comprehension, and willingness to communicate (p. 135). Finally, Beatty and Payne (1981) theorized that cognitive complexity functions as a construct which intervenes between life experiences and formation of RA (p. 369). Thus, considerable justification can be found in the existing literature for the study of the potential impact that the covariates of RA and cognitive complexity might have on assessments of listening comprehension.

The variable of mood state has also been demonstrated by researchers to have a potential impact on listening comprehension. Nichols and Lewis (1954) reported that an individual's mental set will override other factors in determining listening behavior. Kelly (1965) and Lundsteen (1979) also concluded that the difficulties individuals may have in concentrating in a listening situation may lie in part with their mood or emotional state during that given communication event. Additionally, authors of current textbooks on listening (Steil et al. 1983; Wolff et al. 1982; Wolvin and Coakley 1983) all speculate on the impact an individual's emotional state might have on their

ability to be effective listeners. Recently, two doctoral dissertations at the University of Florida did investigate mood state as a potential covariate in measures of listening comprehension (Butler, 1984; Paschall, 1984). While their research did not determine that mood state had significance as a factor affecting listening scores achieved by their subjects, the variable of mood state still has potential that should be explored.

Based on a review of the literature, this study was conducted to examine the theoretical empirical relationship between listening comprehension, receiver apprehension, and mood state. Because of the importance of listening to the educational situation (McDowell and McDowell, 1978; Paschall, 1984), this investigation was conducted in the form of a field study. The degree to which these covariates might exist, and the impact they might have on the listening comprehension levels of individuals in the normal classroom setting, formulates the basis for this research.

Definitions

Based on the preceding review of literature and on the particular design and objectives for this empirical field study, the following definitions are stipulated:

1. Cognitive Complexity (CC) will be defined as levels on a continuum of information processing ability (Beatty 1981; Beatty et al. 1978; Schroder, Driver and Struefert, 1961). One end of the continuum labeled

as cognitively simple (CS) consists of individuals who utilize only a few dimensions and a simple set of integration rules for combining these dimensions into overall judgements and impressions. The other end of the continuum labeled as cognitively complex (CC) consists of individuals who use dimensions or constructs and a complex set of rules for combining those dimensions into overall impressions and judgements. These individuals are expected to process information with greater ease and flexibility than CS individuals (Beatty, 1981; Beatty and Payne, 1981). Because a subject's score on the PCT has been found to be reliable as an indication of his/her ability to process information (Beatty et al. 1978), the subject's score will provide the operational definition of the level of CC for that subject.

2. Receiver Apprehension will be defined as levels ranging from low to high of the specific trait anxiety representing the predisposition of an individual to respond to receiving tasks with anxiety (Beatty and Payne, 1981). Based on the assimilation construct developed by McReynolds (1976) and Wheeless (1975), RA is defined as a cognitive backlog resulting from inadequate information processing and the consequent discomfort of the individual receiving the information (Beatty, 1981; Beatty, Behnke and Henderson, 1980; Beatty and Payne 1981). Because the RAT has been found to be a respectable measure of subjects' tendencies to respond anxiously in listening situations that

require information processing, a subject's score on the RAT will provide the operational definition of the level of RA for that subject (Beatty and Payne, 1981).

3. Mood State will be defined as the total global estimate of the affective state of a subject based on the six identifiable moods conceptualized by McNair and Lorr, 1964). The six adjectives describing the mood states will be labeled as: Tension-anxiety, depression-rejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment. Because the POMS has been found to be a respectable measure of the total affective state of an individual, a subject's score on the POMS will provide the operational definition of the mood state for that subject (McNair and Lorr, 1964).

4. Listening Comprehension will be defined as levels of listening skill ranging from low to high which represent individual ability to process information by assigning meaning to what has been heard; through an integrative framework of understanding provided by previous experience and knowledge (Beatty, 1981; Hollingsworth, 1974; Kelly, 1967; Nichols and Lewis, 1954). Thus listening comprehension is defined as a form of information processing (Beatty and Payne, 1981). Because the STEP is widely accepted as a reliable instrument measuring listening comprehension, a subject's score on the STEP will provide the operational definition of the listening comprehension level for that subject (Keller, 1960; McCaleb, 1981).

Research Hypotheses

Based on the review of literature and on the need specified for research to determine communication variables which may affect listening, the following research hypotheses are proposed:

Hypothesis 1: Subjects' scores on cognitive complexity will not be related to subjects' listening comprehension scores.

Hypothesis 2: Subjects' scores on cognitive complexity will not be related to subjects' scores on receiver apprehension.

Hypothesis 3: Subjects' scores on receiver apprehension will not be related to subject's scores on listening comprehension.

Hypothesis 4: Subjects' listening comprehension scores as related to subjects' levels of cognitive complexity will not be related to subjects' mood scores.

CHAPTER II
METHODOLOGY

Research Design

This study was conducted to explore the possible relationship between listening comprehension, cognitive complexity, receiver apprehension, and mood state. The research was carried out in the form of an exploratory field study in intact college classes in order to determine if these relationships are significant in the natural classroom environment. Students in twenty varied classes at Broward Community College, Central Campus, Fort Lauderdale, in January and February 1984, were chose to participate in the study. The use of intact groups would allow more naturalistic results in an education setting. Also, the wide variation in types of classes selected would create the potential for widely diversified scores of levels of cognitive complexity and of degrees of receiver apprehension.

The testing was administered in two sessions, one week apart, in order to avoid possible test fatigue effects. The Receiver Apprehension Test (RAT) and the Paragraph Completion Test (PCT) were administered during the first session, while the Sequential test of Educational Progress Test and the Profile of Mood States test were administered during the second session. The order of the RAT and the

PCT test administration was alternated among the classes in order to screen for possible test order effects. Also, each session began with instructions to the voluntary participants by their instructors that test results would be anonymous and would not affect their grades. These precautions were taken in order to eliminate test anxiety which might artificially manipulate participants' normal levels of cognitive complexity, receiver apprehension, listening comprehension, and mood state.

The listening test was pre-recorded by a trained, professional speaker in controlled audio-studio conditions and the test was evaluated by speech communication professionals for quality and consistency of presentation. This procedure was used to eliminate the lack of uniformity that might occur during live readings of the test. The tape provided an initial sample passage with sample questions in order to allow subjects to become familiarized with test procedures. A further check on possible test anxiety occurred during the conclusion of the sample passage section of the tape, when the researcher conducted an audio-level check and asked for questions about the test procedure.

Once the audio check was completed and any questions about test procedures were answered, the researcher moved out of the sight of the participants until the test was concluded. Some possible effects of researcher expectancy could be controlled by taking this precaution.

Subjects Used in This Study

This study used an initial pool of 511 student volunteers enrolled in twenty day and night college classes in speech, reading, English, Honors English, mathematics, pre-calculus, engineering, business, sociology, nursing or police advanced career training at Broward Community College, Central Campus, Fort Lauderdale, Florida during the 1984 Spring Semester.

In order to insure diversity in levels of cognitive complexity and receiver apprehension, a wide range of students enrolled in beginning through advanced level courses were chosen. The inclusion of students enrolled in night classes added to the potential for diverse scores, since many of those students are already career professionals.

Four test subjects were not adequately identified on all test forms and had to be dropped from the study. Also, a large subject loss occurred because of the one week time span between administration of the pretests and the listening test. Many students were absent for one session or the other, with a total of 106 subjects failing to complete all four tests and the post-test questionnaire. A subsequent total N of 401 subjects was achieved with an average of 20 subjects in each of the twenty classes.

Materials

The Paragraph Completion Test (PCT)

The PCT is reported to be the most practical and effective test instrument for the measurement of the level of cognitive complexity currently available (Beatty and Payne, 1981).

Developed by Schroder and his associates (1961) the PCT is designed as an index to measure the dimensional complexity of a person's interpersonal constructs; a series of levels ranging from cognitively simple to cognitively complex. The subject is requested to write at least three sentences in response to a series of six-sentence stems within a fifteen minute time frame. The six stems are as follows: "When I am in doubt," "Confusion," "Rules," "Parents," "Criticism," When I am criticized" (Schroder, 1961) (See Appendix A).

Scoring is done by using a technique developed by Schroder (1961) which focuses on both the number of dimensions and the complexity implied by the structural properties of the response. The scoring manual includes detailed descriptions of the combinatory rules used to determine the structual properties of the responses and a minimum of two examples of responses that represent each level of complexity are provided. A numerical rating of one to seven is assigned to each of the responses made by the subject based on the scoring manual rules and examples (Beatty and Payne, 1981, p. 367).

The numerical ratings are then totaled to determine a subject's score; with a potential score range of 7 to 84 points.

Schroder (1961) reported that responses to the PCT sentence stems are correlated enough to permit collapsing data into a single score and, that given a training period, inter-rater reliability coefficients are attainable. Beatty and Payne (1981) reported that inter-stem correlation coefficients ranged from .63 to .84 and that inter-rater reliabilities ranged from 82. to .94 for individual stems. There was a .88 mean for the total PCT scores in their study.

The PCT offers two distinct advantages over other measures of cognitive complexity (Beatty and Payne, 1981). The rules for combinations and numbers of constructs used in the Schroder scoring system allow for a more full conceptualization of cognitive complexity beyond the ICDI and the CRCI measures mentioned previously in this study. Secondly, the complexity of rules for scoring the PCT does not depend upon the length of the subject's responses, thus the PCT is less affected by verbosity than the other test instruments. Power et al. (1979) reported that the ICDI and the CRCI were not independent of verbosity. Therefore, their validity as measures of cognitive complexity is controversial because cognitive complexity is not correlated to verbal ability

(Delia, 1974).

Beatty and Payne tested the PCT for verbosity and found that there was no significant correlation of PCT scores with verbosity; r = .233 n.s. (1981, p. 367). This is a far superior result than the .40 to .50 range of correlation between verbosity and the test instruments used by Delia et al. (1979).

Finally, Beatty and Payne (1981) discovered a significant correlation between the PCT and the Hurt Innovativeness Scale, a further indication of the validity of the PCT's measurement of the construct of cognitive complexity.

Sequential Test of Educational Process--Listening Test (STEP)

Based on an extensive search of the best possible measuring device for listening comprehension in a related study, Pachall (1984) examined the listening assessment material collected by the Florida State Task Force on College Level Assessment Skills Program, in Tallahassee on May 18, 1983 and determined that the 1979 version of the STEP was the most feasible instrument for use in an educational setting (p. 28).

The STEP has been widely accepted as a reliable instrument measuring listening comprehension and has been implemented in a number of listening studies (Keller, 1960; McCaleb, 1981; Paschall, 1984). The STEP consists of five short narratives recorded on tape followed by two to five

short questions on each narrative to be answered by the subject on the STEP scoring sheet (See Appendix B). The subject is allowed 15 seconds to respond to each question. Scoring is based on the number of correct responses scored by the subject on his or her answer sheet.

The STEP also fulfills the criteria listed by Backlund et al. (1980) for effective listening instruments: short responses, a standard vocabulary level, and pre-recorded.

STEP Audio Tape

In keeping with the recommendations of Backlund et al. (1980), the stimulus material and test items of the STEP were recorded on audio tape. The recording session was conducted in an audio recording booth of the television studio facility at Broward Community College under the guidance of the researcher and a fully trained studio technician. A high quality reel-to-reel tape was used for the initial recording. The test was then dubbed directly onto each of two high quality cassette tapes. A trained speech and theatre, male, professional speaker delivered all instructions, stimulus passages and test items. The tape was timed in order to insure uniform length for the pauses between the test questions and the answer choices. The recording was also edited to eliminate speaker errors.

The tape was reviewed by two speech professionals with advanced degrees in communication. They evaluated the tape for quality and consistency of presentation.

The tape was judged to be of professional standards by the evaluators in terms of audio quality. The quality of the speaker's presentation was determined to be very good, consistent in both rate and variety for all messages. Also, the speaker was deemed to be conversational in style by the evaluators.

Receiver Apprehension Test (RAT)

According to recent research, the RAT is the only prominent self-report measure of receiver anxiety (RA) to date and has been the assessment instrument used in the limited number of RA studies that have been conducted (Paschall, 1984, p. 38). Wheeless developed the RAT as a Lickert-type scale consisting of twenty items which require the subject to reflect upon how he or she feels when listening. The instrument relies heavily on the Personal Report of Communication Apprehension (PRCA) for content of its items and, therefore, measures apprehension as related to communication (Wheeless, 1975, p. 264) (See Appendix C).

Research by Beatty, Behnke and Henderson (1980) documented the reliability and validity of the RAT as a measurement of listening anxiety. The RAT was determined to correlate with an alternative measure of listening anxiety, was reported stable over time, and predicted specific anxiety responses to listening tasks (Beatty, Behnke and Henderson, 1980, p. 35). Reliability estimates for the RAT have ranged from .80 to .86 in further testing (Beatty

and Payne, 1981). Finally, the RAT has been determined by additional research to function in a manner consistent with theoretical expectations concerning RA (Beatty, 1981; Scott and Wheeless, 1977).

Profile of Mood States (POMS)

The POMS has been determined to be a rapid, economical method of assessing a subject's mood state (Paschall, 1984). The POMS consists of 65 five-point adjective rating scales which measure six identifiable moods or adjective states as follows: tension-anxiety, depression-rejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment (See Appendix D). A total mood score is obtained by summing the scores across all six factors (vigor is weighted negatively); this score yields a global estimate of the affective state of the subject (McNair, Lorr and Droppleman, 1981).

Internal consistency of the POMS factors were reported by McNair and Lorr (1964) to be near .90 or above. Test-retest reliability for the six measured factors ranged from .61 to .69 as also determined by McNair and Lorr (1964). In further studies Lorr, Daston and Smith (1967) also identified eight mood factors, five of which confirmed the POMS factor. Finally, McNair, Lorr and Droppleman (1981) determined that six factors analytic replication in the development of POMS may be taken as evidence of factorial validity.

Post-Experimental Questionnaire

A brief five item post-test questionnaire was complied by the researcher to assess subjects' prior training in speech and communication apprehension. The subjects were asked to indicate if they had any hearing loss or disability. They were also asked to indicate if English was their native language (See Appendix E).

Procedure

During the first week of 1984 Spring Semester (Term II) instructors were chosen at random by their department chairman and asked if they were willing to cooperate with the study. The researcher met on an individual basis with each of the instructors for the twenty classes they designated to participate in the study. The instructors, all college teaching professionals with advanced degrees in their field of study, were informed of the purposes and procedures for the study. Almost all of the instructors requested that the researcher conduct both sessions of the study and so, for the sake of uniformity, this request was granted. The instructors agreed to remain in the classroom while the tests were conducted.

During the third week of 1984 Spring Semester, the first test session was administered to all twenty classes participating in the study. The researcher was introduced by the instructors as a member of the speech department, completing her Ph.D. from the University of Florida, who

was collecting data on communications skills among students at Broward Community College. The students were told that their participation was completely voluntary; that their scores would be kept confidential; that they would have access to their scores from the researcher on an individual basis; and that their participation in the study would have no bearing on their grades. Further, students were told that they would use only their social security numbers for identification on all the test instruments. Since the study was not experimental in nature, neither the University of Florida nor Broward Community College required informed subject consent forms from the participants. Only one student in all of the twenty classes refused to participate in the study.

Depending on the test order assigned to each class, either the RAT or the PCT was administered first, with the other following during the initial test session. These tests were alternated as a check on possible test-order effects. The RAT took no more than ten minutes to complete and the answer sheets were collected immediately. The PCT was timed, allowing a maximum fifteen-minute period for completion. At the end of the fifteen minutes the tests were collected. The session ended with the researcher thanking the students for their participation in the study.

The second thirty-minute test session was conducted exactly one week later in all twenty classes. The

researcher thanked the students once again for their voluntary participation in the study. Students were again reminded that all scores would be kept confidential; that they would have access to their scores upon completion of the study; and that their participation in the study would have no bearing on their grades. The students were reminded to use their social security numbers only on the answer sheets.

The researcher then distributed the test booklets and answer sheets for the STEP test. Preliminary instructions on the use of the test booklets and answer sheets were given by the researcher. The students were told that the narrator on the tape would tell them when to open their test booklets and when to turn the pages of their test booklets. The students were told to circle answer choices on the answer sheets only. They then were told that they would listen to instructions, a sample narrative, and sample test questions. At the conclusion of the sample passage and sample questions, the tape recorder was turned off and students were given the opportunity to ask questions about the test procedure. Also, an audio-level check was conducted at that time to insure that the volume was at a comfortable listening level. In all twenty classes the students had previous experience taking standardized tests and there were no questions about the test procedure.

At this time, the researcher informed the students that the test would be conducted without interruption from that point and that there would be no further communication from the researcher until the conclusion of the test; barring any unforeseen, unusual circumstances. The researcher started the test portion of the tape and then stepped to the back of the classroom to stand with the course instructor, out of the line of vision of the participants. Some possible experimenter expectancy effects were eliminated with this procedure.

At the completion of the test, the STEP booklet and answer sheets were collected. Students were asked to check to be sure that they had entered their Social Security numbers at the top of the answer sheets.

The POMS test was then administered and took no more than ten minutes to complete. Again, students were asked to check their Social Security numbers at the top of their test sheets.

The researcher thanked the students for their participation in the study and informed them that the test results would be available at the completion of the study in June. The appropriate office phone numbers were given at that time so that the students could contact the researcher if they were interested in obtaining their test results.

The twenty classes were located in various buildings and the sessions were conducted from 8:00 in the morning

through 3:00 in the afternoon on each day of the week. The night classes all met on Monday evenings from 7:00 to 10:00. Since the study was to be conducted as an exploratory field study, strict control of time of day was not essential, beyond insuring that both sessions in a given class occurred exactly one week apart. Of the seven buildings and the fourteen classes used, none was significantly more comfortable or more unique. There were no unusual happenings that occurred to influence the sessions during the two-week time period of the study.

The same cassette tape was used on the same portable unit throughout the STEP test sessions. Care was taken by the researcher to place the unit in the front of each room on the instructor's desk, approximately three feet from the first row of student chairs. An audio level check was conducted with each group to insure a comfortable volume level for the students; this level did not differ significantly from group to group. This procedure eliminated some extraneous factors that could have influenced scores on the STEP test.

Analysis of Results

The level of cognitive complexity and/or the level of receiver apprehension may or may not have a significant effect on an individual's performance on a listening test. The process of analysis presented in this chapter was designed to assess the possible relationships of cognitive

complexity and receiver apprehension with listening comprehension, while assessing the possible influence of mood state as a covariate. The results of this analysis are discussed in the following chapter.

CHAPTER III
RESULTS

This chapter presents tabulated results of the Paragraph Completion Test, the Receiver Apprehension Test, the Sequential Test of Educational Progress-Listening Test, the Profile of Mood State Test, and the Post-Experimental Questionnaire. Statistical findings in response to the study's four hypotheses are also discussed.

Broward Community College

The 401 students for this study were enrolled in various courses at Broward Community College's Central Campus, Fort Lauderdale, Florida. Established over twenty years ago, Broward Community College is the second largest community college in the State of Florida with its North, Central, South, and Allied Health Campuses as well as sever "Downtown Centers."

Central Campus is the largest of the three campus sites with over six thousand of the twelve thousand full-time students enrolled in the entire college. The campus consists of twenty-four buildings which include the Allied Health Center, the Criminal Justice Institute, the Bailey Theatre for the Performing Arts, and the Buehler Planetarium. The BCC Central Campus has day, night, and weekend course offerings in areas as diverse as university parallel programs culminating in the Associate of Arts

degree (A.A.) or the Associate of Science Degree (A.S.); certificate programs and degrees in dental assisting, physical therapy, nursing, and paramedical training; hotel, motel and tourism; criminal justice, police, and fire science academies; and community service courses in addition to open college television courses.

Because BCC is an "open door" college, students range from sixteen years of age to senior citizens; many of whom have full-time or part-time jobs and careers in the surrounding community. Also, international students from over fifty countries around the world attend Central Campus. The student population, as a result, is a rich and varied population from which to draw a field study sample; with wide generalizability in terms of the interpretation of the results.

Test Findings

The RAT, STEP and POMS tests were hand-scored by the researcher and checked for accuracy. The PCT was scored by two raters; the researcher and a qualified, college teaching professional, holding a doctorate in Speech Communication (See Appendix F for a listing of the raw score data for the 401 subjects).

Paragraph Completion Test (PCT)

Each subject completed the PCT one week before participating in the STEP listening test. The PCT was scored by two raters. Each of the six sentence-stem

completions was evaluated independently by each rater on the 1-7 point scale used in the scoring manual (Schroder, 1961). The two highest scores were then averaged to obtain the subject's score on the test; with a "one" score representing the lowest level of cognitive complexity and a "seven" score representing the highest level of cognitive complexity (See Table 1).

In order to establish inter-rater reliability, a training session was held for the two raters. Both raters discussed the scoring system thoroughly and worked with examples provided in the scoring manual (Schroder, 1961, pp. 185-204). Twenty-five PCT tests were then selected at random to be scored independently by the raters. The scores were then subjected to statistical treatment (a product-moment correlation coefficient) and inter-rater reliability was found to be significant ($r = .884$).

After all the PCT tests had been scored independently, a further check on inter-rater reliability was run using SAS procedures. Again, inter-rater reliability was found to be significant ($r = .734$) at the .001 level.

Since the ratings were reliable, the two raters' scores were averaged for each subject to obtain a mean score. This score was then statistically treated as the subject's level of cognitive complexity; the results of which will be discussed in this chapter.

Table 1.

Descriptions for Schroder's Seven Scale Points for Ratings of Cognitive Complexity

Scale Point	Description
1	- Fixed rule for behavior - No alternatives and no ambiguity - One side of subject only
2	- Point of transition between scale points one and three - qualification of fixed rule but no alternative interpreted
3	- shows alternatives exist to fixed rule - Alternatives are internally created, not imposed from outside - deals with probability statements
4	- Point of transition between scale points three and five - response implies alternative interpretations and implies that the interpretations can interact. - The interaction is not expressed as the emergence of comparison rules.
5	- Considers the relationships between alternative behaviors - Give reasons for the similarities and differences between the alternatives. - Takes other person's perspectives into account and sees mutuality of behavior.

Table 1 - continued

Scale Point	Description
6	- Transition point between scale points five and seven. Indicate simultaneous operation of alternatives - Gives some evidence of the consideration of functional relations between them.
7	- Inserts theoretical implications - able to see global perspectives - highest possible integration of opposing points of view.

Sequential Test of Educational Progress (STEP

The STEP test consisted of 18 answer choices valued at 5.5 points for a total of 100 points (STEP, 1979). The overall mean score for the subjects was 74.5 with a standard deviation of 34.7. The highest score obtained on the listening test was 100, with the lowest score being 11.

Profile of Mood States

The POMS was scored using hand overlays and instructions provided by the POMS manual (McNair et al. 1981). Individual scores on each of the six factors were calculated for each subject. The total mood score for each individual was obtained by adding the six factors (weighting "vigor" negatively). The total mood score is assumed to be important in obtaining a single global estimate of each individual's affective state. The total score was considered to be the most important factor for statistical treatment, as it reflected an individual's mood that might have had impact on his or her listening comprehension score. Mean scores for each factor were also calculated for statistical treatment (See Table 2).

Post-Experimental Questionnaire

The post-experimental questionnaire was administered following the STEP test session. Eighty-three subjects reported prior speech training. Approximately 21 of the subjects described their prior instruction to be an introductory speech course at Broward Community College while other subjects indicated instruction in high school.

Table 2

Individual and Total Mood Scores

Mood Factor		Mean	Standard Deviation
M_1	Tension	9.9227	6.5292
M_2	Depression	8.3341	9.5148
M_3	Anxiety	7.7880	8.4476
M_4	Vigor	-14.8878	7.5129
M_5	Fatigue	9.8878	7.3973
M_6	Confusion	7.8678	5.0383
Total Mood		28.9127	33.2471

No subjects reported previous training in communication anxiety reduction. Four subjects indicated hearing loss. These subjects failed to complete all phases of the study and were removed from the study prior to learning of their hearing loss. Approximately 42 subjects reported that English was not their native language; but their scores on the test instruments were found to fall within the normal range of scores. Since this was a field study, they were not removed from the subject pool.

Hypotheses Test Results

The research hypotheses were tested by using procedures from the Statistical System (SAS, 1982). The variables to be correlated were levels of cognitive complexity, levels of receiver apprehension, and listening comprehension scores; mood score was considered as a covariate. Four statistical null hypotheses were examined, with the probability levels set at .05 on each.

The initial hypothesis tested concerned the relationship of the variables of cognitive complexity and listening comprehension:

H_1: Subjects' score on cognitive complexity will not be related to subjects' listening comprehension scores.

By using the SAS procedure "correlation" (SAS, 1982, p. 503) subjects' levels of cognitive complexity were found to be significantly correlated with subjects' levels of listening comprehension ($p < .0011$); consequently, this hypothesis

could be rejected at the .05 level (See Table 3). There is a linear relationship existing between cognitive complexity and listening comprehension.

As can be seen from the results listed in Table 3, the r value for the first hypothesis is .163. This means that there is a positive relationship between the two variables; as one increases in value, so does the other. However, there must be caution when interpreting this data; total predictive validity does not exist in these results, as there may be other variables with the potential to influence the direction of the relationship.

A SAS procedure regression was used to further treat the data in order to determine the possible existence of any curvilinear relationships between the variables. At the conclusion of the procedure, a curvilinear relationship was not found to exist. Thus, the best relationship that can be established between listening comprehension and cognitive complexity is a positive, linear relationship with an intercept value of 33.66 and a slope value of 20.75 (See Figure 1).

The second hypothesis focused on the effect of levels of cognitive complexity in relationship to the effect of levels of receiver apprehension:

H_2: <u>Subjects' scores on cognitive complexity will not be related to subjects' scores on receiver apprehension</u>.

By using SAS procedure "correlation" (1982, p. 503) subjects' levels of cognitive complexity were found to be significantly correlated with subjects' levels of

Table 3

Hypotheses Test Results

Hypothesis	r Value	p Value
H_1	.16271	.0011 *
H_2	.10458	.0363 *
H_3	.03172	.5266 NS
H_4	.04251	.2569 NS
	.02263	.6515 NS

Note: An * indicates statistical significance
NS indicates no-significance

Figure 1: Listening Comprehension and Cognitive Complexity

The values for measurements of levels of listening comprehension are listed on the vertical axis. The values for measurements of levels of cognitive complexity are listed along the horizontal axis. Scores plotted are from the total N of 401.

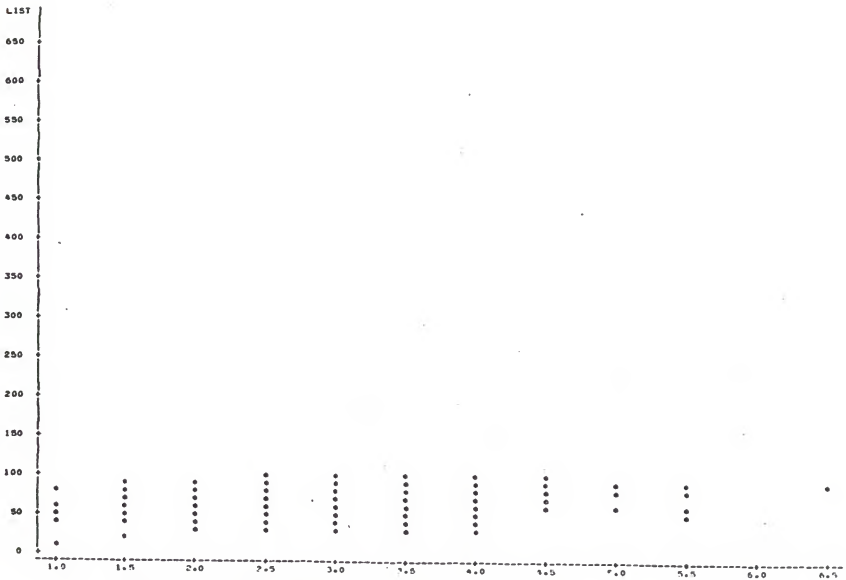

Figure 1: Listening Comprehension and Cognitive Complexity

receiver apprehension ($p < .0363$). Consequently, this hypothesis could be rejected at the .05 level (See Table 3).

As can be seen from the results listed in Table 3, the r value for the second hypothesis is .105. This means that there is a negative relationship between the two variables; as one increases in value, the other decreases. Subjects scoring high in receiver apprehension tend to score slightly lower on cognitive complexity. Again, as with the results of Hypothesis 1, caution must be applied when interpreting the results of this data. Total predictive validity does not exist, as there may be other variables with the potential to influence this relationship.

A SAS procedure regression was used to further treat the data in order to determine if possible curvilinear relationships existed between the variables of cognitive complexity and receiver apprehension. Again, as with the test for Hypothesis 1, no curvilinear relationship was found to exist. Thus, the best relationship that can be established is a negative linear relationship between cognitive complexity and receiver apprehension; with an intercept value of 76.00 and a slope value of 1.06 (See Figure 2).

The third hypothesis focused on the effect of levels of receiver apprehension with levels of listening comprehension:

H_3: <u>Subjects' scores on receiver apprehension will not be related to subjects' scores on listening comprehension.</u>

By using SAS procedure "correlation" (1982, p. 503) sub-

Figure 2: Receiver Apprehension and Cognitive Complexity

The values for levels of measurements of receiver apprehension are listed on the vertical axis. The values for measures of cognitive complexity along the horizontal axis. The scores plotted are from a total N of 401.

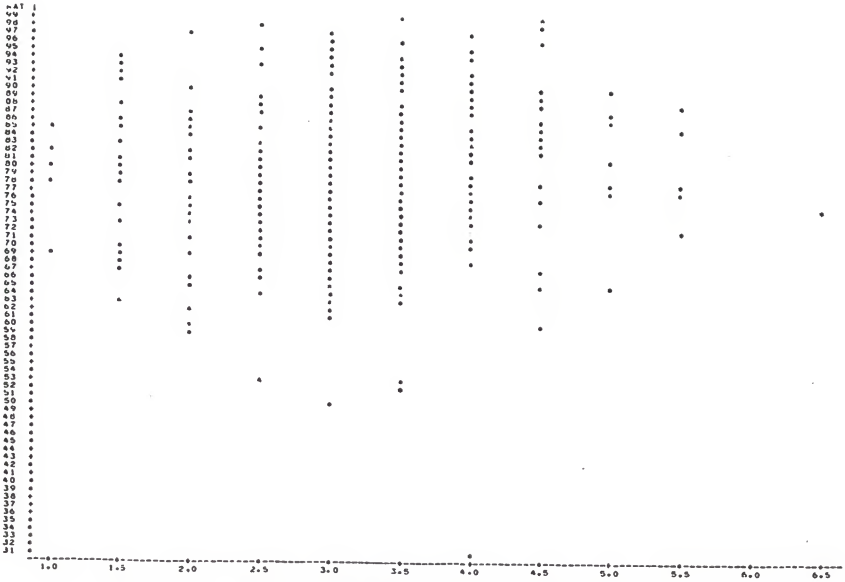

Figure 2: Receiver Apprehension and Cognitive Complexity

jects' levels of receiver apprehension were found not to be significantly related at the .05 level ($p < .5266$). Therefore, this hypothesis could not be rejected (See Table 3).

The fourth hypothesis test dealt with the effect of mood scores on subjects' listening comprehension scores as correlated to subjects' levels of cognitive complexity (See Table 3).

H_4: Subjects' listening comprehension scores as related to subjects' levels of cognitive complexity will not be related to subjects' mood scores.

The SAS procedure correlation (1982, p. 503) revealed that neither total mood scores nor individual mood scores were significantly related to subjects' listening scores and subjects' level of cognitive complexity ($p < .2569$ and $p < .6515$ respectively).

Since neither of the main effects were significant, this hypothesis could not be rejected at the .05 level (See Table 3).

Summary

A wide range of scores was obtained in this study indicating a wide sample of levels of cognitive complexity, levels of receiver apprehension, and levels of listening comprehension. This result was not surprising due to the wide range of subjects chosen for this study. The POMS also yielded a wide range of scores on each of the six individual mood factors as well as the total mood score.

The post-experimental questionnaire revealed that none of the subjects had any training in communication apprehension reduction. The few subjects who reported a hearing loss had been dropped from the study. A number of subjects reported prior speech training and a number of subjects reported English was not their native language. Since these subjects' scores were in the normal range of scores, they were included in the study.

Levels of cognitive complexity were shown to be positively related to levels of listening comprehension. Also, levels of cognitive complexity were found to be negatively correlated to levels of receiver apprehension. Levels of receiver apprehension were not shown to have any effect on levels of listening comprehension. Finally, total mood scores were not found to be related to levels of listening comprehension nor to levels of cognitive complexity.

CHAPTER IV
DISCUSSION

Conclusions

In this exploratory study an effort was made to determine if relationships exist between the variables of cognitive complexity, receiver apprehension, listening comprehension, and mood state. The model for this study was generated from current research literature which suggests a possible relationship between levels of cognitive complexity and receiver apprehension, as well as a relationship between receiver apprehension and listening comprehension. The notable gap in the model is the potential relationship between listening comprehension and cognitive complexity.

The initial conclusion that can be drawn from this study is that cognitive complexity and listening comprehension are, in fact, significantly correlated; this relationship is positive and linear in nature. What can be inferred from this result is that people who are high in cognitive complexity appear to have the tendency to score higher on listening comprehension tests than individuals who have lower levels of cognitive complexity. While this is definitely not a casual relationship nor a total predictive model, it still is a linear relationship.

This predicted finding is a very important outcome of this study. It represents the first attempt to test for these relationships between cognitive complexity and listening comprehension in a "typical" college classroom environment. Recently, Beatty and Payne (1984) have concluded that higher levels of listening comprehension were related to higher levels of cognitive complexity. But their study focused solely on subjects enrolled in undergraduate speech communication courses who were tested for their comprehension of highly technical, excessively difficult subject matter. Hence, the conclusions of their study are not as readily generalizable to a widely diverse college population, nor to a college population is typical listening situations.

This result of the testing of the first hypothesis for the present study may be of significance to the College Level Aptitude Skills Test (CLAST) on listening that will be offered in August 1985 to all college sophomores in Florida. The measurement of listening comprehension is deemed necessary as one of the competencies that must be tested in this procedure. The STEP (1979) seems to have the comprehension testing aspect that will be easily adaptable in a standardized format for large groups.

The second research hypothesis investigating the relationship between receiver apprehension and cognitive

complexity was also statistically significant. As a result, it can be stated that individuals scoring low on receiver apprehension will tend to have slightly higher levels of cognitive complexity than individuals who have high scores on receiver apprehension. Again, this outcome is consistent with the research compiled by Delia (1972, 1974, 1977) and Beatty et al. (1978, 1980, 1981). These researchers have repeatedly concluded that individuals with high receiver apprehension tend to be less cognitively complex than individuals with low receiver apprehension. The concurrance of opinion among these researchers is that cognitively complex individuals have extended information processing abilities and are able to accumulate less unassimilated information hence they have lower levels of receiver apprehension.

Because of the results of the statistical tests on the first two hypothesis for this study, the model discussed in the opening portion of this chapter becomes more clear. As previously stated, studies of cognitive complexity have focused on the receiver apprehension aspects of information processing. Additionally, there have been studies of receiver apprehension which focused on listening comprehension as an aspect of information processing. In this study, the variable of cognitive complexity has been related to both the variables of

receiver apprehension and listening comprehension; the missing element or gap in the model has now been explored.

Finally, the conclusions that cognitive complexity is positively correlated to listening comprehension and that cognitive complexity is negatively related to receiver apprehension are now generalizable to a widely diverse college student population. Prior to this study, the research conclusions were only generalizable to limited groups such as beginning speech students or school children.

The third hypothesis dealt with the possible relationship between listening comprehension and receiver apprehension. This finding was not statistically significant and is, therefore, not consistent with the theoretical literature and the empirical research in this area (McCroskey, 1983; Wheeless, 1975). An investigation of one behavioral aspect of receiver apprehension (RA) may be helpful. McCroskey (1983) concluded that some individuals may experience RA in one situation and not in others. For example, students may experience high levels of RA when the "pay-off" is very important to them. Such a situation could be knowing that the material they are listening to will be part of a test experience from which their grade will be determined. The same students might experience little RA in the same situation if their grade is not dependent on their listening test score.

In this field study, students were in a low "pay-off" situation and were not experimentally manipulated in any fashion. To begin with, both testing sessions for this study took place in the students' regular classroom environment with their instructors present. Also, at the beginning of each session, students were told that their participation was on a strictly voluntary basis; that their scores would only be identified by social security numbers; that no one would have access to their scores; and that their scores would in no way determine their grades for the course. With such an approach, students had prior knowledge about the confidentiality of the study and knew that the pay-off was low; their grades did not hinge on test results. It seems that students' levels of apprehension may have been lower due to the non-threat conditions in which they were tested. The expected relationship between receiver apprehension and listening comprehension may not exist in these conditions.

Finally, the time lapse between the administration of the receiver apprehension test and the listening test was one week. It may be possible that students' levels of apprehension were lower during the second session than the first due to their familiarity with the researcher at that point. It may be necessary to experimentally manipulate those variables in some way

in order to more nearly approximate levels of receiver apprehension that might be found in listening test situations where the pay-off is considerably higher; such as the CLAST listening test.

The last hypothesis of concern to this study involved the relationship of mood state as a covariate in the correlation of listening comprehension with cognitive complexity. Once again, the effects were not statistically significant and, so, the null hypothesis could not be rejected. Hence, the results of this study do not support mood state as a possible covariate of influence on measures of listening comprehension.

Intuitively, it would seem that the mood state of an individual could interfere with his or her ability to listen to or comprehend information. The research literature indicates that mood state might impact on an individual's ability to listen (Kelly, 1965; Lundsteen, 1979; Nichols and Lewis, 1954). McNair and Lorr (1964) found that mood state had an impact in educational settings as well as in industrial and psychological settings. However, two recently completed dissertations at the University of Florida (Butler, 1984; Paschall, 1984) have also reported that the mood state of an individual was not statistically significant as a covariate in measurements of listening comprehension. Both researchers had investigated the variable only as a

covariate in their experimental studies, so perhaps there is a problem with these approaches to the investigation of mood state.

Also, the mood states explored focused on anxiety-related factors: tension, depression, anxiety, fatigue, and confusion. Only the mood state of vigor was not anxiety-related and the scoring of that factor received a negative weight. As has been previously discussed, this field study did not seem to provoke apprehension in students to the same degree that a grade-related testing situation might. Students do participate in many test-taking situations by the time they enter college and many of them become adept at concentrating on a test rather than on any emotions they may be experiencing in a given test situation.

Additional information was sought in terms of statistically treating the data for this study. A manova in procedure GLM of SAS revealed that there was no test-order effect for subjects during the first session. It did not matter if the students were given the Paragraph Completion Test of the Receiver Apprehension Test first; their scores were the same in either condition.

As a last comment about the results of this study, it is noteworthy that a wide range of scores were obtained for the 401 students participating in the study. When planning the study, it was hoped that selecting

students from widely diverse backgrounds that cut across a wide range of scholastic and career disciplines would insure a wide range in scores of cognitive complexity, receiver apprehension, and listening comprehension. Such a diversity of scores would provide a more thorough test of these relationships as they might exist in the college classroom environment.

Limitations of the Study

The initial limitation to this study, that will be discussed here, is the most obvious. This study was designed to be exploratory and descriptive in nature. Therefore, the normal conditions of a controlled, laboratory environment were not present. This study was designed, however, to be an initial exploration of the research model involving the variables of cognitive complexity, receiver apprehension, and listening comprehension. The desire was to try and determine whether, and to what extent, relationships existed among these variables in the college classroom. However, this examination might lack the type of validity offered by results gained under controlled, experimental conditions.

A second limitation to this study could conceivably exist in the fact that the student participants were fully informed about the complete nature of the research during the first session. This direct instruction may have

induced a predisposition to listening, particularly since participation was on a purely voluntary basis. Only one student refused to participate in all of the twenty classes chosen for the study. The willingness of the students to be involved may have caused them to exhibit closer attention to the situation then they might have paid to a speaker or instructor during a typical class session. Also, it is not often that students in Broward Community College have an opportunity to participate in on-going research. The novelty of such an experience could have caused them to be more attentive than usual.

This pinpoints a difficulty for future listening research in that the assessment of listening will involve this trade-off between an abnormal listening situation on the part of the student and a controlled, reliable, valid measure of that same student's listening ability in experimental conditions.

The third possible limitation to this study was the fact that the listening test took place during a brief session, unaccompanied by other forms of test-taking. As a result, there should be caution in the interpretation of this data in the light of the upcoming CLAST listening test conditions in August, 1985. If the listening test portion of this examination occurs at the middle or conclusion of a long three hour standardized test session, fatigue might play a part in scores achieved by the

students. Also, more apprehension might exist on the part of students in such a test situation because a large pay-off will be involved. The students must pass the test in order to advance to their junior year of college study.

A fourth possible limitation of this study is that the listening test focused on comprehension as the type of listening skill measured. It is possible that critical or analytical listening skills might be necessary for a student to successfully acquire and integrate knowledge on the college level.

Implications for Future Research

The need for further research in listening and communication is both vast and important. Four specific suggestions for future research will be discussed here.

First, more research must be conducted on the nature of the listening process itself in two major areas: adequate instruments for listening assessment and specific variables that influence an individual's ability to listen. There is a lack of current knowledge on these important aspects of listening ability, thus additional research is vital to the growth of this body of information. As has been previously noted in this study, only a few of the fifty assessment instruments currently available pass scrutiny for this type of measurement. Much research remains to be done

on designing valid and reliable test instruments that measure specific abilities proven to exist in classroom listening situations.

A second focus for future research should be on experimental studies that control for a wide variety of conditions in the measurement of the relationships between the variables of cognitive complexity, receiver apprehension, and listening comprehension. The conclusions of this study should be viewed only as preliminary research conducted to discover if relationships between these variables do exist in the classroom environment. Also, it is suggested here that these experiments should focus on widely diverse subjects populations, as represented by the range of types of students used in this study. Much of the past communication research in listening has been limited to college students enrolled in speech classes. Other groups should be tested in the educational setting with a wide variety of listening assessment measures implemented.

A third area important for future research involves the investigation of types of listening other than "listening to comprehend." Although comprehension is a fundamental factor for other types of listening abilities and is the easiest type of listening to measure at this point in time, individuals do not necessarily listen to comprehend exclusively. In the educational context of the college

classroom, for example individuals are often expected to engage in critical, evaluative or analytic listening. In the business context these same types of listening abilities might be essential to an individual's climb up the corporate ladder. Finally, in the interpersonal context, individuals may need to engage in empathetic, appreciative, or even therapuetic listening modes. Thus, individual levels of cognitive complexity and receiver apprehension need to be explored for their impact on varied types of listening skills in education, in business as well as in interpersonal situations.

A fourth area for future research on listening may need to focus on test fatigue and order effect on listening scores. It may make a difference in students' scores on listening assessments if the testing of their listening skills occurs at the beginning, the middle, or the conclusion of a lengthy mass test-taking situation. Certainly this whole area of research has particular relevance to the CLAST 1985 listening tests.

The complexity of the listening process involves numerous variables, as does the college classroom listening situation. All of these variables need to be involved in further research in order to thoroughly understand this important communication skill. It is impossible to isolate or to control for all of these variables, or for all of the possible educational, business, and

interpersonal situations in which individuals may need to rely upon their listening skills. Based on rationale developed from a thorough review of related and relevant literature, this field study explored the effects of levels of cognitive complexity, levels of receiver apprehension, and levels of listening comprehension in the college classroom.

The findings of this study show that cognitive complexity and listening comprehension are positively related, while cognitive complexity and receiver apprehension are negatively related. However, listening comprehension and receiver apprehension were not found to have any relationship in this study. Finally, mood state was not found to have any influence on listening comprehension. These conclusions suggest that variables not investigated in this study may have an impact on assessments of listening comprehension in the educational environment. Thus, there are many needs and directions for future research into the areas of communication known as listening.

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APPENDIX A

PARAGRAPH COMPLETION TEST (PCT)

APPENDIX A

PARAGRAPH COMPLETION TEST (PCT)

THE PARAGRAPH COMPLETION TEST by Paul Schroder

DIRECTIONS: For each of the six sentence stems you are to complete each stem into a sentence. Then, expand that sentence with two more sentences to form a complete paragraph.

1. (a) When I am in doubt _____

_____

_____

(b) _____

_____

_____

(c) _____

_____

_____

2. (a) Confusion _____

_____

_____

(b) _____

_____

_____

(c) _____

_____

_____

3. (a) When I am confused _____

PARAGRAPH COMPLETION TEST by Paul Schroder
PAGE 2

3. (a) _____

_____

(b) _____

_____

_____

(c) _____

_____

_____

4. (a) Parents_____

_____

_____

(b) _____

_____

_____

(c) _____

_____

_____

5. (a) When I am criticized_____

_____

_____

(b) _____

_____

_____

PARAGRAPH COMPLETION TEST by Paul Schroder
PAGE 3

5. (c) _____

_____

_____

6. (a) Criticism means_____

_____

_____

(b) _____

_____

_____

(c) _____

_____

_____

APPENDIX B

SEQUENTIAL TEST OF EDUCATIONAL PROGRESS--
LISTENING TEST (STEP)

APPENDIX B

SEQUENTIAL TEST OF EDUCATIONAL PROGRESS--LISTENING TEST (STEP)

The Sequential Test of Educational Progress--Listening Test, developed by the Educational Testing Service, was published by the McGraw-Hill Publishing Company. Due to the copyrighted nature of this test, it is not reproduced in this volume, but may be obtained by writing the McGraw-Hill Publishing Company. The test was used in this research with express, written permission of McGraw-Hill Publishing Company.

APPENDIX C

RECEIVER APPREHENSION TEST (RAT)

APPENDIX C

RECEIVER APPREHENSION TEST (RAT)

The following statements apply to how various people feel about receiving communication. Indicate if these statements apply to how you feel by noting whether you (5) strongly agree, (4) agree, (3) are undecided, (2) disagree, or (1) strongly disagree.

		SA	A	U	D	SD
1.	I feel comfortable when listening to others on the phone	1	2	3	4	5
2.	It is often difficult for me to concentrate on what others are saying.	1	2	3	4	5
3.	When listening to members of the opposite sex I find it easy to concentrate on what is being said.	1	2	3	4	5
4.	I have no fear of being a listener as a member of an audience.	1	2	3	4	5
5.	I feel relaxed when listening to new ideas.	1	2	3	4	5
6.	I would rather not have to listen to other people at all.	1	2	3	4	5
7.	I am generally overexcited and rattled when others are speaking to me.	1	2	3	4	5
8.	I often feel uncomfortable when listening to others.	1	2	3	4	5
9.	My thoughts become confused and jumbled when reading important information.	1	2	3	4	5
10.	I often have difficulty concentrating on what others are saying.	1	2	3	4	5
11.	Receiving new information makes me feel restless.	1	2	3	4	5
12.	Watching television makes me nervous.	1	2	3	4	5
13.	When on a date I find myself tense and self-conscious when listening to my date.	1	2	3	4	5

		SA	A	U	D	SI
14.	I enjoy being a good listener	1	2	3	4	5
15.	I generally find it easy to concentrate on what is being said.	1	2	3	4	5
16.	I seek out the opportunity to listen to new ideas.	1	2	3	4	5
17.	I have difficulty concentrating on instructions others give me.	1	2	3	4	5
18.	It is hard to listen or concentrate on what other people are saying unless I know them well.	1	2	3	4	5
19.	I feel tense when listening as a member of a social gathering.	1	2	3	4	5
20.	Television programs that attempt to change my mind about something make me nervous.	1	2	3	4	5

APPENDIX D

PROFILE OF MOOD STATES (POMS)

APPENDIX D

PROFILE OF MOOD STATES (POMS)

The Profile of Mood States, constructed by Douglas McNair, Maurice Lorr and Leo Droppleman, was published by the Educational and Industrial Testing Service, San Diego, California. Due to the copyrighted nature of this test, it is not reproduced in this volume, but may be obtained by writing the Educational Test Service.

APPENDIX E

POST-EXPERIMENTAL QUESTIONNAIRE

APPENDIX E

POST-EXPERIMENTAL QUESTIONNAIRE

Student Number_____

Please answer the following questions. All information will be kept confidential.

1. Is English your first language? Yes___ No___

2. Have you had any speech training prior to this course? Yes___ No___

   When_____ Nature of training?

3. Have you had any Communication Apprehension training prior to this course? Yes___ No___

   When_____ Nature of training?

4. Do you have any hearing problems? Yes___ No___

   Describe the nature of the problem.

5. Do you wear an artificial hearing device? Yes___ No___

APPENDIX F

SUBJECTS' RAW SCORES DATA

OBS	SUBJ	CL	ORDER	RA1	LIST1	R1	R2	R3	PQ1	PQ2	PQ3	PQ4	PQ5	M1	M2	M3	M4	M5	M6	MOOD
1	1	10	1	85	83	2	3	2.5	1	1	2	2	2	5	2	7	-21	4	6	3
2	2	14	2	86	78	2	2	2.0	1	1	1	2	2	13	17	7	0	16	14	67
3	3	13	1	98	89	5	4	4.5	1	1	1	2	2	2	0	0	-17	0	0	-17
4	4	15	1	94	87	4	4	4.0	1	2	2	2	2	13	6	12	-12	11	10	40
5	5	3	1	66	72	3	3	3.0	1	2	2	2	2	11	9	10	-24	9	10	17
6	6	12	2	71	78	4	2	3.0	1	2	2	2	2	5	2	1	-14	6	7	7
7	7	6	1	79	78	5	6	5.5	1	2	2	2	2	7	1	1	-32	1	0	-30
8	8	11	2	85	44	3	4	3.5	1	2	2	2	2	16	5	7	-17	11	3	25
9	9	10	1	80	67	3	3	3.0	1	2	2	2	2	23	20	23	-7	16	15	75
10	10	2	2	86	70	4	5	5.0	1	2	2	2	2	4	4	1	-17	5	5	-3
11	11	20	2	86	70	3	3	3.0	1	2	2	2	2	17	13	18	-10	3	10	51
12	12	19	1	67	56	2	1	1.5	1	1	2	2	2	25	34	32	-8	13	14	110
13	13	18	2	83	63	3	2	2.5	1	2	2	2	2	8	6	10	-22	0	0	2
14	14	17	1	95	56	2	3	2.5	2	2	2	2	2	3	4	12	-11	0	12	20
15	15	16	2	82	87	3	3	3.0	1	2	2	2	2	0	2	6	-19	0	4	-7
16	16	17	1	75	63	3	3	2.5	1	2	2	2	2	1	0	0	-18	3	1	-13
17	17	14	2	76	63	3	2	2.5	1	2	2	2	2	6	3	3	-4	9	8	-5
18	18	2	2	79	44	3	4	3.5	2	2	2	2	2	29	36	35	-12	23	26	157
19	19	9	2	81	44	3	3	2.5	1	2	2	2	2	6	1	4	-7	1	9	12
20	20	8	1	73	72	5	3	4.0	1	2	2	2	2	3	5	5	-25	3	7	-2
21	21	7	2	97	44	3	1	2.0	1	2	2	2	2	11	13	11	0	17	15	70
22	22	5	1	73	100	3	3	3.0	1	1	2	2	2	5	1	1	-17	6	2	6
23	23	3	1	70	78	2	1	1.5	1	2	2	2	2	3	0	0	-24	0	0	-21
24	24	1	1	69	67	2	1	1.5	1	2	2	2	2	8	3	1	-15	6	7	13
25	25	4	1	69	11	1	1	1.0	2	2	2	2	2	1	0	0	-4	4	4	8
26	26	1	1	80	56	1	1	1.0	1	2	2	2	2	12	3	4	-33	8	8	12
27	27	1	1	93	72	4	3	3.5	1	2	2	2	2	4	1	7	-17	3	6	2
28	28	1	1	76	78	2	2	2.0	1	2	2	2	2	7	6	7	-25	5	6	6
29	29	1	1	88	67	2	1	1.5	1	2	2	2	2	2	2	0	-24	8	3	-9
30	30	1	1	76	61	2	2	2.0	1	2	2	2	2	9	3	8	-18	3	6	12
31	31	1	1	73	67	4	3	3.5	1	2	2	2	2	15	6	6	0	24	7	60
32	32	1	1	69	61	2	2	2.0	1	2	2	2	2	8	12	13	-18	7	2	26
33	33	1	1	91	67	2	1	1.5	1	2	2	2	2	3	1	3	-26	1	2	-16
34	34	1	1	87	72	4	3	3.5	1	2	2	2	2	13	4	6	-26	13	10	78
35	35	1	1	80	78	3	2	2.5	1	2	2	2	2	12	2	6	-19	6	9	15
36	36	1	1	87	56	3	3	3.0	1	2	2	2	2	3	7	5	-16	4	4	10
37	37	1	1	78	33	2	2	2.0	1	1	2	2	2	11	11	11	-24	9	10	78
38	38	1	1	87	97	2	2	2.0	1	2	2	2	2	7	5	3	-26	7	9	10
39	39	1	1	70	61	2	1	1.5	1	1	2	2	2	11	28	17	-15	13	12	71
40	40	1	1	75	61	2	1	1.5	1	2	2	2	2	6	6	5	-13	5	7	18
41	41	1	1	79	39	1	2	1.5	1	2	2	2	2	4	5	3	-12	4	8	12
42	42	1	1	73	83	2	1	1.5	1	2	2	2	2	4	4	0	-5	6	1	10
43	43	1	1	80	83	2	3	2.5	1	2	2	2	2	3	2	4	-29	1	8	-9
44	44	1	1	75	56	4	3	3.5	1	2	2	2	2	11	11	10	-24	5	9	25
45	45	1	1	75	74	2	3	2.5	1	2	2	2	2	12	8	10	-21	13	6	27
46	46	1	1	72	61	4	3	3.5	1	2	2	2	2	10	12	9	-16	14	8	35
47	47	1	1	71	39	2	2	2.0	1	2	2	2	2	11	9	12	-22	12	7	29
48	48	1	1	88	61	2	1	1.5	1	1	2	2	2	3	4	3	-24	2	6	-2
49	49	1	1	88	83	2	1	1.5	1	1	2	2	2	6	0	7	-20	5	3	1
50	50	2	2	89	61	3	4	3.5	1	2	2	2	2	23	16	35	-4	25	12	107
51	51	2	2	80	72	4	3	3.5	1	2	2	2	2	4	0	0	-11	4	4	1
52	52	2	2	89	78	4	4	4.0	1	2	2	2	2	17	12	6	-7	18	9	54
53	53	2	2	78	44	4	4	4.0	1	2	2	2	2	4	1	0	-13	6	4	2
54	54	2	2	81	56	4	3	3.5	1	2	2	2	2	11	8	3	-7	4	7	14
55	55	2	2	78	97	3	3	3.5	1	1	2	2	2	6	0	1	-16	0	3	-6
56	56	2	2	89	94	3	3	3.0	1	2	2	2	2	6	0	1	-11	1	0	-1
57	57	2	2	81	100	4	4	4.0	1	2	2	2	2	5	6	7	-5	13	6	33
58	58	2	2	86	61	4	3	4.5	1	2	2	2	2	10	19	20	-9	28	12	87
59	59	2	2	90	83	3	3	3.0	1	2	2	2	2	4	8	4	-14	1	5	12
60	60	2	2	77	50	5	6	5.5	1	2	2	2	2	18	6	4	-11	2	10	29
61	61	2	2	71	56	2	2	2.0	2	2	2	2	2	25	8	2	-8	22	12	61
62	62	2	2	92	56	1	2	1.5	1	2	2	2	2	11	8	12	-16	2	4	-5
63	63	2	2	87	67	4	3	3.5	1	2	2	2	2	11	10	9	-18	11	11	35
64	64	2	2	73	56	2	2	2.0	1	2	2	2	2	7	0	7	-16	6	11	15
65	65	2	2	89	72	4	4	4.5	1	2	2	2	2	16	21	11	-20	7	8	43
66	66	2	2	78	78	5	5	5.0	1	2	2	2	2	7	9	3	-9	3	10	26
67	67	2	2	92	97	4	4	4.0	1	2	2	2	2	3	2	2	-17	1	5	-4
68	68	2	2	90	83	2	2	2.0	1	2	2	2	2	8	12	4	-14	11	7	56
69	69	2	2	93	50	2	1	1.5	1	2	2	2	2	20	21	14	-29	9	15	54
70	70	2	2	86	94	4	3	3.5	1	1	2	2	2	9	1	9	-24	15	3	18
71	71	2	2	94	100	4	3	3.5	1	2	2	2	2	9	2	1	-16	2	4	-5
72	72	2	2	82	61	3	2	2.5	1	2	2	2	2	16	20	20	-1	22	19	96

OBS	SUBJ	CL	ORDER	RAT	LIST	R1	R2	R3	PG1	PG2	PG3	PG4	PG5	M1	M2	M3	M4	M5	M6	MOD
73	73	2	2	83	93	4	5	4.5	1	2	2	2	2	8	4	9	-13	18	6	32
74	74	2	2	85	78	1	1	1.0	1	2	2	2	2	9	4	4	-18	13	8	20
75	75	3	1	79	72	2	2	2.0	2	2	2	2	2	9	4	4	-21	1	4	-6
76	76	3	1	68	63	3	3	3.0	1	1	2	2	2	8	6	6	-17	7	4	13
77	77	3	1	82	61	2	2	2.0	1	2	2	2	2	8	10	1	-20	13	5	17
78	78	3	1	75	94	7	6	6.5	1	1	2	2	2	10	9	6	-16	6	6	21
79	79	3	1	81	67	2	2	2.0	1	2	2	2	2	27	14	26	-14	14	9	10
80	80	3	1	77	89	3	2	2.5	1	2	2	2	2	13	5	4	-17	8	10	25
81	81	3	1	80	56	2	1	1.5	1	1	2	2	2	9	1	1	-31	0	4	-25
82	82	3	1	68	61	2	1	1.5	1	1	2	2	2	3	0	2	-30	0	3	-22
83	83	3	1	80	67	4	3	3.5	1	1	2	2	2	5	2	4	-23	10	7	3
84	84	3	1	78	61	6	5	5.5	1	2	2	2	2	4	3	6	-21	3	2	-3
85	85	3	1	80	78	3	2	2.5	1	2	2	2	2	4	0	0	-22	7	3	-17
86	86	3	1	80	83	2	2	2.5	1	2	2	2	2	6	2	0	-5	8	3	13
87	87	3	1	66	28	3	2	2.5	1	2	2	2	2	29	35	31	-32	28	21	152
88	88	3	1	69	39	4	3	3.0	1	2	2	2	2	22	17	30	-4	13	18	92
89	89	3	1	74	72	4	4	4.0	1	2	2	2	2	11	1	8	-18	8	6	16
90	90	3	1	79	67	3	3	3.0	1	2	2	2	2	4	1	2	-16	9	0	0
91	91	3	1	79	89	4	4	4.0	1	2	2	2	2	4	3	13	-15	17	12	45
92	92	3	1	85	50	4	3	3.5	1	1	2	2	2	18	8	15	-28	10	8	31
93	93	3	1	95	72	3	3	3.0	1	2	2	2	2	8	1	3	-28	4	1	-11
94	94	3	1	71	90	3	2	2.5	1	2	2	2	2	10	3	3	-21	3	3	2
95	95	3	1	73	78	3	2	2.5	1	2	2	2	2	3	2	5	-13	6	2	5
96	96	3	1	73	50	3	2	2.5	1	2	2	2	2	9	5	5	-6	12	6	31
97	97	3	1	83	94	5	6	5.5	1	1	2	2	2	23	8	10	-17	22	3	47
98	98	3	1	81	72	2	1	1.5	2	2	2	2	2	11	7	7	-13	6	4	22
99	99	3	1	84	39	3	3	3.0	1	1	2	2	2	9	5	6	-27	1	0	-11
100	100	3	1	80	61	4	4	4.0	1	2	2	2	2	9	5	6	-24	5	4	6
101	101	3	1	83	78	3	3	3.0	1	2	2	2	2	4	3	0	-24	2	1	-14
102	102	3	1	85	61	3	3	3.0	1	2	2	2	2	4	0	0	-24	2	1	-17
103	103	3	1	67	61	5	4	4.5	1	1	2	2	2	21	7	12	-21	25	4	48
104	104	3	1	81	78	4	4	4.0	1	2	2	2	2	5	2	0	-12	5	4	4
105	105	3	1	67	56	2	1	1.5	1	1	2	2	2	3	3	2	-18	7	4	-3
106	106	3	1	83	72	3	2	2.5	1	2	2	2	2	13	8	6	-14	10	3	26
107	107	4	2	70	94	4	3	3.5	1	1	2	2	2	9	8	4	-6	23	12	50
108	108	4	2	85	72	1	2	1.5	1	2	2	2	2	3	4	7	-26	1	0	-1
109	109	4	2	62	39	2	2	2.0	1	1	2	2	2	4	0	2	-7	0	5	4
110	110	4	2	89	61	3	3	3.0	1	1	2	2	2	5	0	0	-15	0	3	-5
111	111	4	2	81	78	5	5	5.0	1	2	2	2	2	12	14	21	-20	13	13	55
112	112	4	2	81	44	2	1	1.5	1	2	2	2	2	8	4	4	-25	3	3	-3
113	113	4	2	83	56	3	2	2.5	1	2	2	2	2	13	5	10	-16	17	12	41
114	114	4	2	66	44	2	3	2.5	2	2	2	2	2	13	1	6	-10	8	7	23
115	115	4	2	67	39	4	3	3.5	1	1	2	2	2	11	13	8	-17	7	16	38
116	116	4	2	82	37	1	1	1.0	1	1	2	2	2	10	7	10	-9	6	5	29
117	117	4	2	82	44	3	2	2.5	1	2	2	2	2	17	1	9	-6	19	10	37
118	118	4	2	76	56	4	4	4.0	1	2	2	2	2	17	12	7	-7	17	11	61
119	119	4	2	73	100	3	3	3.0	1	1	2	2	2	3	2	5	-16	6	5	3
120	120	4	2	97	83	2	2	2.5	2	2	2	2	2	9	6	6	-13	6	9	23
121	121	4	2	82	73	2	2	2.0	1	2	2	2	2	14	0	0	-28	8	4	18
122	122	4	2	70	67	3	2	2.5	1	2	2	2	2	11	14	11	-21	1	9	25
123	123	4	2	70	67	3	3	3.0	1	2	2	2	2	8	9	4	-23	7	8	23
124	124	4	2	76	83	4	4	4.0	1	2	2	2	2	4	3	8	-23	6	6	7
125	125	4	2	74	44	2	2	2.0	1	2	2	2	2	7	3	2	-15	3	5	7
126	126	4	2	84	89	4	4	4.0	1	2	2	2	2	13	4	14	-12	22	9	49
127	127	4	2	78	61	3	4	3.5	2	2	2	2	2	9	18	5	-15	17	18	52
128	128	5	1	77	78	3	4	3.5	1	1	2	2	2	1	11	3	-15	7	3	10
129	129	5	1	87	61	4	3	3.5	1	2	2	2	2	7	3	2	-20	3	2	0
130	130	5	1	76	83	4	3	3.5	1	2	2	2	2	11	10	1	-7	22	8	43
131	131	5	1	86	94	2	1	1.5	1	2	2	2	2	3	6	0	-7	20	15	37
132	132	5	1	76	83	3	2	2.5	1	2	2	2	2	3	1	0	-12	16	3	11
133	133	5	1	85	56	5	4	4.5	1	2	2	2	2	9	1	0	-13	4	5	-3
134	134	5	1	80	67	3	4	3.5	2	2	2	2	2	17	6	14	-27	19	11	40
135	135	5	1	70	74	2	1	1.5	1	2	2	2	2	11	10	15	-13	16	21	60
136	136	5	1	73	67	4	3	3.5	2	2	2	2	2	0	0	5	-25	0	3	-15
137	137	5	1	73	100	4	3	3.5	1	2	2	2	2	0	3	5	-21	10	7	13
138	138	5	1	79	72	3	4	3.5	1	2	2	2	2	13	13	22	-23	19	6	50
139	139	5	1	75	72	2	2	2.0	1	2	2	2	2	13	7	10	-24	12	5	23
140	140	5	1	89	100	4	4	4.0	1	2	2	2	2	4	3	0	-13	3	4	3
141	141	5	1	81	56	3	3	3.0	1	2	2	2	2	21	45	29	-7	24	15	103
142	142	5	1	94	61	2	1	1.5	1	2	2	2	2	20	31	11	-3	26	18	103
143	143	5	1	70	74	3	2	2.5	1	2	2	2	2	5	11	4	-15	9	6	20
144	144	5	1	90	83	3	3	3.0	2	2	2	2	2	10	4	7	-15	5	5	16

OBS	SUBJ	CL	ORDER	RAT	LIST	R1	R2	R3	PQ1	PQ2	PQ3	PQ4	PQ5	M1	M2	M3	M4	M5	M6	MOOD
145	145	5	1	69	72	3	3	3.0	2	2	2	2	2	15	3	0	-14	11	11	26
146	146	5	1	85	72	2	2	2.0	1	2	2	2	2	7	0	0	-6	4	4	7
147	147	5	1	65	67	2	2	2.0	2	2	2	2	2	7	0	0	-7	8	5	21
148	148	5	1	86	87	3	3	3.0	1	2	2	2	2	8	12	5	-13	18	6	17
149	149	5	1	73	83	4	4	4.0	1	1	2	2	2	12	1	0	-8	16	6	29
150	150	5	1	66	44	3	3	3.0	1	2	2	2	2	12	19	9	-6	27	18	77
151	151	5	1	77	83	3	2	2.5	1	1	2	2	2	16	12	12	-14	8	12	47
152	152	5	1	64	67	3	2	2.5	1	2	2	2	2	29	24	14	-8	7	18	84
153	153	5	1	74	83	3	2	2.5	1	2	2	2	2	6	4	2	-7	4	4	13
154	154	6	1	85	83	3	2	2.5	1	2	2	2	2	6	1	3	-3	24	17	48
155	155	6	1	78	78	5	4	4.5	2	2	2	2	2	4	0	0	-15	3	4	1
156	156	6	1	87	78	3	2	2.5	2	2	2	2	2	34	48	43	-3	29	21	167
157	157	6	1	82	44	3	3	3.0	1	2	2	2	2	12	16	8	-24	1	8	37
158	158	6	1	71	87	4	4	4.0	1	2	2	2	2	2	17	11	-20	1	5	16
159	159	6	1	70	72	4	4	4.0	1	2	2	2	2	23	23	15	-13	23	18	69
160	160	6	1	86	44	2	2	2.0	1	2	2	2	2	3	2	0	-3	3	5	7
161	161	6	1	87	78	3	3	3.0	1	2	2	2	1	8	2	10	-3	24	9	51
162	162	6	1	50	72	3	3	3.0	1	2	2	2	2	10	8	7	-17	11	8	37
163	163	6	1	76	87	5	4	4.5	1	2	2	2	2	8	0	1	-15	13	8	15
164	164	6	1	80	74	4	3	3.5	1	2	2	2	2	6	6	1	-20	5	7	7
165	165	6	1	81	78	4	3	3.5	1	2	2	2	2	19	20	15	-3	23	12	83
166	166	6	1	84	78	4	3	3.5	1	2	2	2	2	3	0	0	-18	1	7	7
167	167	6	1	78	51	3	3	3.0	1	2	2	2	2	13	1	2	-7	9	7	25
168	168	6	1	91	83	4	3	3.5	1	1	2	2	2	7	3	2	-24	5	3	4
169	169	6	1	77	61	5	6	5.5	1	2	2	2	2	7	2	2	-13	12	6	16
170	170	6	1	93	100	4	3	3.5	1	1	2	2	2	19	22	2	-12	13	15	57
171	171	6	1	90	67	3	3	3.0	1	2	2	2	2	1	2	4	-18	4	0	3
172	172	6	1	75	83	3	2	2.5	1	1	2	2	2	18	14	10	-20	19	15	56
173	173	7	2	75	50	4	2	3.5	2	2	2	2	2	16	12	11	-3	6	12	54
174	174	7	2	76	78	3	2	2.5	2	2	2	2	2	11	1	2	-7	3	10	20
175	175	7	2	99	97	2	2	2.0	2	2	2	2	2	13	9	6	-13	3	8	26
176	176	7	2	79	67	2	2	2.0	1	2	2	2	2	11	31	19	-14	7	11	65
177	177	7	2	73	83	3	2	2.5	1	2	2	2	2	7	11	17	-7	8	6	40
178	178	7	2	99	72	4	3	3.5	1	2	2	2	2	11	1	14	-19	9	3	20
179	179	7	2	65	78	4	3	3.5	1	2	2	2	2	8	17	10	-17	7	7	28
180	180	7	2	78	61	4	4	4.0	1	2	2	2	2	10	4	9	-15	24	6	38
181	181	7	2	92	97	4	4	4.0	1	2	2	2	1	8	11	36	-16	7	9	55
182	182	7	2	75	78	3	3	3.0	1	2	2	2	2	9	5	2	-19	18	4	32
183	183	7	2	62	87	3	3	3.0	1	2	2	2	2	7	7	0	-8	3	6	15
184	184	7	2	75	44	3	2	2.5	1	2	2	2	2	17	7	7	-8	26	14	67
185	185	7	2	65	72	5	4	4.5	1	2	2	2	2	7	5	10	-17	1	4	9
186	186	7	2	84	100	4	5	4.5	1	2	2	2	2	2	0	0	-13	1	1	-9
187	187	7	2	79	50	3	2	2.5	1	2	2	2	2	8	6	6	-8	0	5	17
188	188	7	2	74	83	4	3	3.5	1	2	2	2	2	13	4	3	-7	25	10	48
189	189	7	2	70	67	2	1	1.5	1	2	2	2	2	7	3	0	-6	7	4	15
190	190	7	2	99	94	1	1	1.0	1	2	2	2	2	9	2	4	-11	6	4	14
191	191	7	2	78	50	1	1	1.0	1	2	2	2	2	11	2	17	-18	16	9	44
192	192	7	2	67	61	3	2	2.5	1	1	2	2	2	14	18	22	-6	20	17	85
193	193	7	2	76	78	2	2	2.5	2	2	2	2	2	1	4	1	-10	12	8	16
194	194	7	2	63	17	2	1	1.5	1	2	2	2	2	12	26	23	-17	7	9	60
195	195	7	2	74	50	4	3	3.5	1	2	2	2	2	6	22	10	-5	14	16	63
196	196	7	2	77	67	3	2	2.5	1	2	2	2	2	5	3	2	-11	11	6	16
197	197	8	1	81	83	4	3	3.5	1	2	2	2	2	9	1	7	-20	7	7	4
198	198	8	1	73	50	4	3	3.5	1	2	2	2	2	17	20	21	-26	14	16	62
199	199	8	1	82	72	4	3	3.5	1	2	2	2	2	5	1	0	-18	0	2	-10
200	200	8	1	77	78	3	2	2.5	1	2	2	2	2	11	3	7	-7	10	5	27
201	201	8	1	60	55	2	2	2.0	2	2	2	2	2	14	11	13	-19	6	11	36
202	202	8	1	82	83	2	2	2.0	1	2	2	2	2	4	2	1	-8	9	7	13
203	203	8	1	76	67	3	3	3.0	1	2	2	2	2	22	8	6	-13	21	12	56
204	204	8	1	77	89	3	3	3.0	1	2	2	2	2	27	18	16	-23	14	14	66
205	205	8	1	80	72	3	3	3.0	1	2	2	2	2	15	14	10	-20	18	11	41
206	206	8	1	78	72	4	3	3.5	1	2	2	2	2	14	7	5	-31	24	6	27
207	207	8	1	76	50	4	3	3.5	1	2	2	2	2	19	24	4	-7	12	17	69
208	208	8	1	68	55	3	4	3.5	1	2	2	2	2	18	36	14	-20	15	11	101
209	209	8	1	67	78	3	3	3.0	1	2	2	2	2	12	10	15	-17	10	7	37
210	210	8	1	83	89	3	3	3.0	1	2	2	2	2	15	12	25	-5	24	7	78
211	211	8	1	92	74	4	3	3.5	1	2	2	2	2	7	1	2	-22	5	5	-4
212	212	8	1	82	61	4	2	3.0	1	1	2	2	2	16	18	13	-3	12	10	66
213	213	8	1	77	89	3	3	3.0	1	2	2	2	2	7	0	0	-17	8	7	6
214	214	8	1	81	78	2	1	1.5	1	2	2	2	2	10	1	6	-20	12	7	13
215	215	8	1	88	50	2	1	1.5	1	2	2	2	2	7	0	2	-17	2	2	-5
216	216	8	1	84	67	2	2	2.0	1	2	2	2	2	4	0	2	-24	0	0	-18

OB B	BV B J	CL	OD ER	RAT	IS 1	R 1	R 2	R 3	P 1	P 2	P 3	P 4	P 5	M 1	M 2	M 3	M 4	M 5	M 6	MOD D
217	217	8	1	67	56	3	2	2.5	1	2	2	1	2	15	7	6	-15	6	16	35
218	218	8	1	71	74	4	3	3.5	1	2	2	2	2	7	7	1	-20	4	2	-2
219	219	8	1	82	56	3	2	2.5	1	2	2	1	2	7	9	1	-16	2	8	-12
220	220	8	1	85	61	3	2	2.5	1	1	1	2	2	13	11	6	-17	2	11	26
221	221	8	1	77	72	3	3	3.0	1	2	2	2	2	6	6	7	-4	17	7	36
222	222	8	1	84	78	4	3	3.5	1	2	2	2	2	14	3	14	-29	5	5	24
223	223	8	1	91	89	4	4	4.0	1	2	2	2	2	7	2	4	-26	4	5	-11
224	224	8	1	84	89	4	5	4.5	1	2	2	2	2	9	4	0	-26	4	3	-12
225	225	8	1	86	73	3	2	2.5	1	2	2	2	2	1	11	2	-20	1	10	5
226	226	8	1	66	50	3	2	2.5	1	2	2	2	2	12	7	1	-20	6	12	37
227	227	8	1	72	56	3	2	2.5	1	2	2	2	2	19	12	30	-16	18	13	76
228	228	8	1	79	67	3	2	2.5	1	2	2	2	1	23	5	9	-5	13	14	40
229	229	9	2	74	44	3	3	3.0	1	2	2	2	2	20	23	26	-5	13	17	94
230	230	9	2	77	67	3	3	3.0	1	2	2	2	2	4	2	1	-20	5	9	-5
231	231	9	2	73	78	3	3	3.0	1	2	2	2	2	6	0	0	-17	4	4	-5
232	232	9	2	94	67	3	3	3.0	1	2	2	2	2	10	3	2	-19	1	4	3
233	233	9	2	84	67	5	4	4.5	1	2	2	2	2	3	1	4	-15	1	4	6
234	234	9	2	84	100	4	3	3.5	1	2	2	2	2	3	1	6	-12	2	2	7
235	235	9	2	81	100	3	3	3.0	1	2	2	2	1	10	18	12	-15	4	13	42
236	236	9	2	66	89	3	2	2.5	1	1	2	2	2	6	9	2	-1	9	7	23
237	237	9	2	83	78	3	3	3.0	1	1	2	2	2	14	7	15	-11	18	6	45
238	238	9	2	76	72	3	3	3.0	1	1	2	2	2	23	27	20	-11	18	10	88
239	239	9	2	73	56	3	3	3.0	1	1	2	2	2	12	23	3	-11	23	8	58
240	240	9	2	67	63	3	3	3.0	1	1	2	2	2	16	16	15	-16	8	14	55
241	241	9	2	73	56	3	3	3.0	1	2	2	2	2	2	0	1	-29	5	4	-5
242	242	10	1	64	72	4	3	3.5	1	2	2	2	2	0	0	0	-1	3	1	-19
243	243	10	1	96	78	3	4	3.5	1	2	2	2	2	0	0	0	-1	11	1	0
244	244	10	1	92	97	3	3	3.0	1	1	2	2	2	0	0	7	-8	19	4	17
245	245	10	1	78	97	3	3	3.0	1	1	2	2	2	5	2	3	-13	8	6	11
246	246	10	1	83	72	2	1	1.5	2	2	2	2	2	1	8	6	-8	17	7	35
247	247	10	1	67	678	4	3	3.5	1	2	2	2	2	5	5	6	-8	6	0	23
248	248	10	1	70	83	3	3	3.0	2	2	2	2	2	16	21	22	-10	13	14	76
249	249	10	1	72	61	5	3	4.0	1	1	2	2	2	3	0	0	-9	4	1	1
250	250	10	1	75	56	3	2	2.5	1	1	2	2	2	10	6	5	-19	0	10	12
251	251	10	1	79	72	3	3	3.0	1	1	2	2	2	14	24	22	-4	18	17	93
252	252	10	1	76	67	3	2	2.5	1	1	2	2	2	3	8	0	-13	0	1	2
253	253	10	1	93	56	3	2	2.5	1	1	2	2	2	6	2	4	-6	23	5	28
254	254	10	1	79	67	3	4	3.5	1	1	2	2	2	3	8	5	-26	6	4	0
255	255	10	1	87	50	4	3	3.5	1	1	2	2	2	3	7	4	-7	9	6	21
256	256	10	1	87	89	5	5	5.0	1	1	2	2	2	7	1	0	-9	7	8	12
257	257	10	1	78	67	2	1	1.5	1	1	2	2	2	9	10	11	-16	21	5	40
258	258	11	2	65	83	4	3	3.5	1	1	2	2	2	11	7	1	-17	23	4	29
259	259	11	2	90	99	4	5	4.5	1	1	2	2	2	15	6	1	-2	28	4	52
260	260	11	2	95	78	4	3	3.5	1	1	2	2	2	9	6	5	-16	7	11	22
261	261	11	2	63	83	3	2	2.5	1	1	2	2	2	10	4	0	-13	1	5	14
262	262	11	2	80	83	4	3	3.5	1	1	2	2	2	10	18	23	-2	25	20	94
263	263	11	2	67	93	3	2	2.5	1	1	2	2	2	3	2	0	-22	12	1	-5
264	264	11	2	78	87	3	3	3.0	1	1	2	2	2	5	0	0	-22	12	1	-5
265	265	11	2	77	78	3	3	3.0	1	1	2	2	2	3	0	0	-2	23	6	28
266	266	11	2	81	99	3	3	3.0	1	1	2	2	2	3	0	2	-27	0	0	-20
267	267	11	2	81	78	4	3	3.5	1	1	2	2	2	2	0	14	-7	14	0	18
268	268	11	2	83	89	5	4	4.5	1	1	2	2	2	0	0	0	-14	3	3	-6
269	269	11	2	93	61	4	4	4.0	1	1	2	2	2	12	0	0	-10	13	4	19
270	270	11	2	89	72	4	4	4.0	1	1	2	2	2	1	0	2	-19	17	9	18
271	271	11	2	97	61	3	4	3.5	1	1	2	2	2	25	18	13	-5	18	7	78
272	272	11	2	95	74	3	4	3.5	1	1	2	2	2	0	0	0	-24	3	0	-21
273	273	11	2	87	89	4	3	3.5	1	1	2	2	2	7	0	0	-12	9	6	25
274	274	11	2	81	83	3	3	3.0	1	1	2	2	2	7	1	1	-4	18	6	27
275	275	11	2	81	61	3	3	3.0	1	1	2	2	2	6	1	1	-10	12	0	19
276	276	11	2	74	67	3	3	3.0	1	1	2	2	2	14	2	4	-2	27	3	51
277	277	11	2	64	93	3	3	3.0	1	1	2	2	2	15	15	21	-18	17	8	58
278	278	11	2	86	93	3	3	3.0	1	1	2	2	2	5	0	0	-22	8	7	-7
279	279	12	2	84	93	4	3	3.5	1	1	2	2	2	5	6	17	-11	16	7	45
280	280	12	2	85	72	3	4	3.5	1	1	2	2	2	8	1	0	-4	6	6	17
281	281	12	2	83	78	3	3	3.0	1	1	2	2	2	5	0	7	-10	0	1	9
282	282	12	2	87	93	3	4	3.5	1	1	2	2	2	8	0	0	-9	24	14	42
283	283	12	2	64	78	3	3	3.0	1	1	2	2	2	8	12	7	-2	11	9	45
284	284	12	2	76	78	3	4	3.5	1	2	2	1	1	8	4	1	-1	20	7	22
285	285	12	2	73	78	3	4	3.5	1	1	2	1	1	7	1	10	-17	2	1	-3
286	286	12	2	86	74	4	3	3.5	1	1	2	2	2	7	2	2	-17	14	5	13
287	287	12	2	81	87	3	3	3.0	1	1	2	2	2	8	1	0	-7	2	6	16
288	288	12	2	86	74	4	3	3.5	1	1	2	2	2	16	5	24	-7	2	6	46

OBS	SUBJ	CL	ORDER	RAT	LST	R1	R2	R3	P91	P92	P93	P94	P95	M1	M2	M3	M4	M5	M6	MOOD
289	289	12	2	97	72	3	3	3.0	1	1	2	2	2	4	0	0	-13	2	1	-4
290	290	12	2	97	78	4	4	4.0	1	2	2	2	2	13	20	7	-1	19	10	76
291	291	12	2	93	83	3	3	3.0	1	2	2	2	2	1	0	0	-10	4	3	-2
292	292	12	2	71	78	3	3	3.0	1	2	2	2	2	14	21	20	-20	18	12	70
293	293	12	2	75	72	3	3	3.0	1	2	2	2	2	12	17	14	-1	16	10	68
294	294	12	2	93	67	3	3	3.0	1	2	2	2	2	27	46	31	-9	19	23	137
295	295	13	1	87	94	4	4	4.0	1	2	2	2	2	20	18	10	-5	21	7	75
296	296	13	1	86	99	3	3	2.5	1	1	2	2	2	5	1	0	-16	4	6	-15
297	297	13	1	90	83	4	3	3.5	1	1	2	2	2	9	7	3	-13	14	4	26
298	298	13	1	73	74	4	3	3.5	1	1	2	2	2	19	18	16	-7	7	7	62
299	299	13	1	87	94	3	3	3.5	1	2	2	2	2	0	4	4	-24	0	0	-16
300	300	13	1	88	94	2	3	2.5	2	2	2	2	2	20	15	29	-18	12	11	69
301	301	13	1	87	75	3	2	2.5	2	2	2	2	2	21	15	11	-11	14	12	63
302	302	13	1	87	89	3	2	2.5	1	2	2	2	2	18	22	17	-8	9	13	71
303	303	13	1	78	100	5	4	4.5	1	1	2	2	2	17	16	11	-16	14	5	57
304	304	13	1	82	100	4	5	4.5	1	2	2	2	2	8	6	4	-11	11	5	22
305	305	13	1	86	99	4	5	4.5	1	1	2	2	2	8	26	7	-12	10	11	50
306	306	13	1	57	78	3	4	3.5	2	2	2	2	2	6	1	11	-29	1	6	7
307	307	13	1	92	99	4	3	3.5	1	1	2	2	2	30	29	22	-15	12	20	101
308	308	13	1	87	72	4	4	4.0	1	2	2	2	2	3	3	2	-32	4	1	-19
309	309	13	1	83	93	4	4	4.0	1	2	2	2	2	22	7	1	-21	12	12	33
310	310	13	1	90	97	5	5	5.0	1	2	2	2	2	16	8	4	-1	24	23	74
311	311	14	2	89	72	4	3	3.5	1	2	2	2	2	3	0	1	-17	2	3	-8
312	312	14	2	82	99	3	2	2.5	1	1	2	2	2	8	0	0	-15	5	6	-6
313	313	14	2	94	50	3	3	3.0	1	2	2	2	2	11	6	4	-25	4	4	-4
314	314	14	2	75	100	4	3	3.5	1	2	2	2	2	15	16	0	-2	8	5	30
315	315	14	2	91	67	4	4	4.0	1	1	2	2	2	5	5	14	-16	24	8	53
316	316	14	2	87	72	4	3	3.5	1	1	2	2	2	23	37	30	-13	25	17	128
317	317	14	2	87	100	4	3	3.5	1	1	2	2	2	6	0	0	-4	12	7	21
318	318	14	2	85	61	3	4	3.5	1	1	2	2	2	16	27	15	-16	11	17	72
319	319	14	2	81	56	3	4	3.5	1	2	2	2	2	12	10	3	-12	6	12	31
320	320	15	1	84	72	4	4	4.0	1	2	2	2	2	2	6	1	-9	10	7	17
321	321	15	1	79	89	4	4	4.0	1	1	2	2	2	6	5	6	-26	7	7	15
322	322	15	1	87	97	5	5	5.0	1	2	2	2	2	15	3	4	-15	9	14	20
323	323	15	1	86	100	4	5	4.5	1	2	2	2	2	4	8	5	-10	24	0	31
324	324	15	1	84	74	3	4	3.5	1	1	2	2	2	3	0	1	-10	1	4	9
325	325	15	1	82	100	4	3	3.5	1	2	2	2	2	6	3	6	-19	5	3	4
326	326	15	1	82	100	4	3	3.5	1	2	2	2	2	5	5	7	-27	2	2	1
327	327	15	1	97	93	4	4	4.0	1	1	2	2	2	2	2	2	-21	7	1	-7
328	328	15	1	83	78	4	4	4.0	1	2	2	2	2	7	4	2	-32	12	5	17
329	329	15	1	77	97	5	5	5.0	1	1	2	2	2	20	3	4	-19	9	6	17
330	330	15	1	97	50	4	4	4.0	2	2	2	2	2	5	11	14	-18	3	7	24
331	331	15	1	85	100	4	5	4.5	1	2	2	2	2	8	9	4	-17	11	6	21
332	332	15	1	60	100	4	5	4.5	1	2	2	1	2	15	20	9	-10	5	11	51
333	333	15	1	88	11	4	4	4.0	1	1	2	2	2	3	0	1	-13	7	3	1
334	334	15	1	92	100	4	3	3.5	1	2	2	2	2	17	11	35	-13	17	3	62
335	335	15	1	76	94	4	4	4.0	1	2	2	2	2	10	10	6	-9	19	14	52
336	336	16	2	89	99	4	4	4.0	1	1	2	2	2	6	8	0	-17	18	8	23
337	337	16	2	81	99	4	3	3.5	1	2	2	2	2	10	10	7	-21	14	6	28
338	338	16	2	87	99	3	4	3.5	2	1	1	2	2	23	11	21	-12	9	8	48
339	339	16	2	77	74	3	3	3.0	1	2	2	2	2	21	40	27	-21	20	17	104
340	340	16	2	81	94	4	4	4.0	1	2	2	2	2	8	5	3	-28	5	6	-1
341	341	16	2	65	56	5	5	5.0	2	2	2	2	2	23	47	29	-12	22	17	119
342	342	16	2	84	74	4	3	3.5	1	2	2	2	2	7	1	5	-29	7	5	-4
343	343	16	2	89	72	4	3	3.5	1	2	2	2	2	5	1	0	-19	1	3	-9
344	344	16	2	63	67	4	3	3.5	1	2	2	2	2	10	10	4	-13	13	11	35
345	345	16	2	87	94	3	3	3.0	1	2	2	2	2	8	9	22	-21	13	5	36
346	346	16	2	85	94	4	4	4.0	1	2	2	2	2	9	5	1	-21	2	5	1
347	347	17	1	81	78	3	3	3.0	1	2	2	2	2	13	7	7	-3	9	15	46
348	348	17	1	78	99	3	4	3.5	1	2	2	2	2	4	0	3	-23	0	1	-15
349	349	17	1	84	93	4	3	3.5	1	1	2	2	2	10	5	6	-7	4	7	27
350	350	17	1	81	56	3	4	3.5	1	1	2	2	2	4	0	0	-6	9	6	7
351	351	17	1	76	67	4	4	4.0	1	2	2	2	2	1	1	1	-20	7	4	-6
352	352	17	1	78	70	3	3	3.0	1	2	2	2	2	8	1	20	-17	3	5	20
353	353	17	1	82	94	4	4	4.0	1	2	2	2	2	10	10	5	-4	9	6	39
354	354	17	1	67	61	3	3	3.0	1	2	2	2	2	16	15	11	-11	15	14	60
355	355	17	1	88	97	4	3	3.5	1	2	2	2	2	9	0	0	-16	7	4	4
356	356	17	1	69	93	3	3	3.0	2	1	2	2	2	33	34	31	-1	28	16	137
357	357	17	1	70	72	2	3	2.5	1	2	2	2	2	2	0	0	-16	0	1	-7
358	358	17	1	81	89	3	2	2.5	1	2	2	2	2	4	4	2	-10	6	3	9
359	359	17	1	81	74	3	3	3.0	1	2	2	2	2	7	2	0	-10	13	7	28
360	360	17	1	82	89	4	3	3.5	1	2	2	2	2	2	2	0	-3	16	4	21

OBS	SUBJ	CL	ORDER	RAT	LIST	R1	R2	R3	PQ1	PQ2	PQ3	PQ4	PQ5	M1	M2	M3	M4	M5	M6	MOOD
361	361	17	1	64	94	3	4	3.5	1	1	2	2	2	18	17	31	-13	20	12	65
362	362	17	1	73	67	4	3	4.5	2	2	2	2	1	9	13	11	-12	9	11	41
363	363	18	2	83	83	4	5	4.5	2	2	1	1	1	5	1	4	-24	2	0	-4
364	364	18	2	77	44	4	4	4.0	1	2	1	2	2	7	5	0	-14	12	6	20
365	365	18	2	60	79	3	3	3.0	1	2	2	2	2	9	18	10	-9	22	12	62
366	366	18	2	93	67	3	2	2.5	1	2	2	2	2	4	5	0	-9	6	5	18
367	367	18	2	71	78	4	3	3.5	1	2	1	2	2	10	21	3	-9	16	12	57
368	368	18	2	72	67	3	2	2.5	1	1	1	2	2	12	9	8	-13	8	10	34
369	369	18	2	81	09	3	2	2.5	1	2	1	2	2	6	6	10	-25	4	5	5
370	370	18	2	77	56	4	3	3.5	1	2	1	2	2	17	16	16	-5	18	12	72
371	371	18	2	79	37	4	3	3.5	1	2	1	2	2	15	15	16	-12	24	17	75
372	372	18	2	76	67	4	4	4.0	1	1	1	2	2	27	37	31	-14	14	23	118
373	373	18	2	84	67	4	3	4.5	2	2	1	2	2	11	0	0	-23	0	10	-2
374	374	18	2	83	44	3	2	2.5	1	2	1	2	2	9	8	3	0	9	12	41
375	375	18	2	68	33	4	4	4.0	1	1	1	2	2	15	19	17	-10	15	15	71
376	376	18	2	78	83	3	3	3.0	1	1	2	2	2	13	8	3	-11	26	10	57
377	377	18	2	67	56	3	3	3.0	1	2	1	2	2	24	26	33	-9	20	18	112
378	378	18	2	78	87	3	3	3.0	1	2	1	2	2	5	0	0	-4	28	6	45
379	379	18	2	75	72	2	3	2.5	1	2	2	2	2	6	13	7	-1	8	11	44
380	380	18	2	92	56	3	3	3.0	2	2	1	2	2	3	2	0	-22	0	3	-14
381	381	19	1	77	67	3	3	3.0	1	2	2	2	2	12	5	0	-14	6	8	17
382	382	19	1	84	72	3	3	3.0	1	2	1	2	2	8	53	2	-16	7	6	60
383	383	19	1	90	72	3	3	3.0	1	2	1	2	2	7	3	2	-17	10	6	11
384	384	19	1	80	67	3	3	3.0	1	2	1	2	2	19	16	20	-10	27	16	68
385	385	19	1	75	72	4	3	3.5	2	2	2	2	2	12	3	3	-27	0	5	-6
386	386	19	1	76	78	3	4	3.5	1	2	2	2	2	11	6	7	-2	11	14	40
387	387	19	1	71	72	4	4	4.0	1	2	2	2	2	24	20	11	-20	19	17	71
388	388	19	1	92	83	3	3	3.0	1	2	2	2	2	23	7	14	-16	16	13	57
389	389	19	1	95	83	3	3	3.0	1	2	2	2	2	5	0	1	-16	7	4	1
390	390	19	1	63	50	4	3	3.5	2	2	1	2	2	6	6	11	-15	5	7	20
391	391	19	1	89	61	3	2	2.5	1	2	1	2	2	6	3	2	-17	5	6	3
392	392	19	1	69	83	4	3	3.5	1	2	2	2	1	16	17	12	-21	7	8	39
393	393	20	2	93	87	4	2	3.0	2	1	2	2	2	7	0	4	-29	7	4	-7
394	394	20	2	92	83	4	3	3.5	1	2	2	2	2	9	14	18	-5	10	14	60
395	395	20	2	72	78	4	2	3.0	2	1	2	2	2	5	1	3	-17	6	7	3
396	396	20	2	65	50	2	2	2.0	1	2	1	2	2	12	15	13	-20	12	13	45
397	397	20	2	73	89	3	4	3.5	1	1	2	2	2	16	9	2	-10	5	14	36
398	398	20	2	87	94	4	4	4.0	1	2	2	2	2	4	0	1	-24	2	2	-15
399	399	20	2	82	94	3	3	3.0	1	2	2	2	2	5	10	9	-7	5	7	25
400	400	20	2	89	94	3	3	3.0	1	2	2	2	1	10	11	12	0	6	11	50
401	401	20	2	81	90	3	3	3.0	1	1	2	2	2	9	0	0	-20	0	0	-3

BIOGRAPHICAL SKETCH

Irmgard Louise Bocchino was born in New York in 1948. She graduated from Nova High School, Fort Lauderdale, Florida, in 1966. She then attended Broward Community College in Fort Lauderdale from 1966-1968, where she majored in speech. An active member of the BCC intercollegiate debate team, Ms. Bocchino received the Associate of Arts degree. She then attended Florida Atlantic University in Boca Raton, Florida, in 1968. Ms. Bocchino received the Bachelor of Arts degree in speech communication with a minor in theatre in 1970.

In 1970, Ms. Bocchino received a graduate teaching assistantship from the University of South Florida in Tampa. She received the Master of Arts in speech communication in 1972 from that institution.

Ms. Bocchino taught various speech communication courses at Broward Community College from 1972 to 1976. She was also Debate Coach and coordinator for radio-television courses during that period of time.

Ms. Bocchino began her doctoral study at the University of Florida in 1976, when she was offered a graduate teaching assistantship to serve as Debate Coach for the university. At the completion of the

required course work and qualifying examinations, she returned to her teaching position at Broward Community College in January 1979.

Ms. Bocchino will graduate in 1984 from the University of Florida with the degree of Doctor of Philosophy in speech communication and a minor in higher education administration. In addition to her teaching duties at Broward Community College, Ms. Bocchino currently is a communications consultant for corporations and city organizations in the South Florida area.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Anthony J. Clark, Chairman
Associate Professor of Speech

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Thomas B. Abbott
Professor of Speech

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Kenneth J. Gerhardt
Associate Professor of Speech

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Howard B. Rothman
Associate Professor of Speech

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James L. Wattenbarger
Professor of Educational Administration
and Supervision